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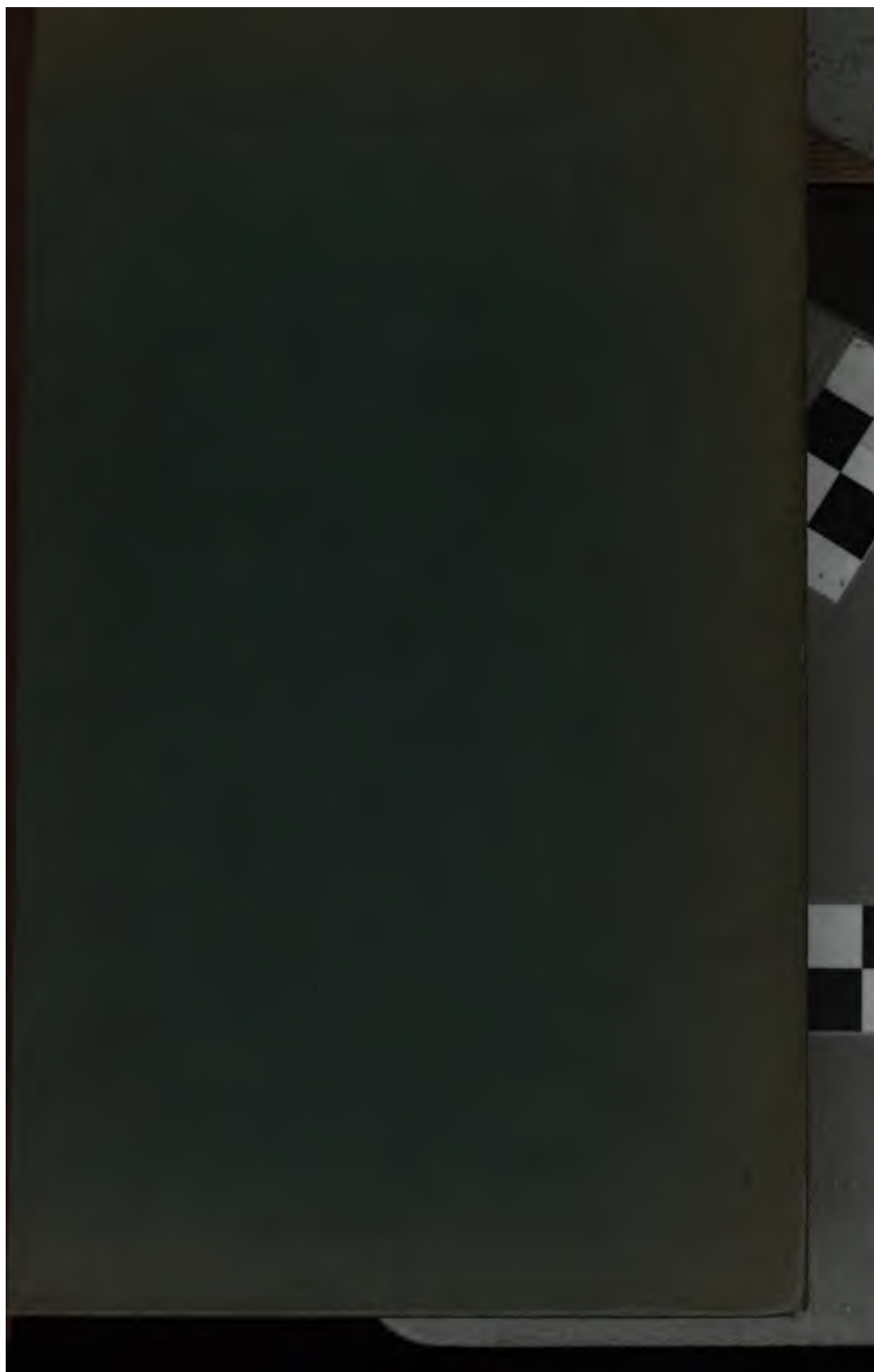
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The New South Africa

OPINIONS OF THE PRESS

"It is to the men who have known and studied the country before the war that we must look to for information as to the real value of the new assets which the South African War has added to the British Empire. Mr. Bleloch's book has appeared at an opportune moment. Its scope is sufficiently indicated by the author's description of it as 'an unofficial prospectus of the work which lies before the British Administration in the new Colonies.' Mr. Bleloch takes care to avoid fanciful speculation, and keeps close to the solid ground of existing facts. His predictions are based on elaborate statistics and actual experience. The gold industry takes the first place in Mr. Bleloch's stock-taking. He estimates the quantity of gold accessible in the Witwatersrand alone at £2,871,000,000, a higher figure than is contained in any preceding estimate; but the figures upon which Mr. Bleloch bases his calculations are by no means exaggerated. The only limit to the exploitation of the Rand is the ultimate depth at which modern mining can be carried on. He shows that under the Transvaal Government the wealthy mines escaped with an infinitesimal charge, while the poor mines were overburdened. Unless the mining law is placed on such a basis that it will help the general development of the country, Mr. Bleloch foresees a period when the Transvaal will be rifled of its gold and revert to a physical and moral desert. His hostility to the capitalists is not indiscriminate. He pays due tribute both to their energy and foresight in developing the Rand, and to their patriotic conduct during the war. He is confident not only about the mineral resources of the new Colonies, but of their agricultural fertility. An official report quoted graphically describes the misery and destitution of the low-class Boer in some of the richest districts of the Transvaal, and contrasts the prosperity of the hard-working little German colony at Luneburg, in Zululand, where about one hundred farmers have settled 'on small plots of land which they have transformed into prolific gardens.' He strongly urges the encouragement of immigration by Government, and the grouping together of the immigrants in small village communities. Among the assets which we have taken over, Mr. Bleloch reckons the inhabitants. His sympathy for his fellow Uitlanders does not make him unjust towards the Boers, and he looks forward to their developing the good characteristics of their race for the benefit of themselves and their fellow-men. He is all for giving the largest measure of self-government possible as soon as circumstances permit it. So far, the 'unofficial prospectus' of Mr. Bleloch has certainly got together a large mass of interesting and important material, and defends his various theses with earnestness and confidence. The book well deserves careful study."—**The Times.**

"A mass of valuable information about the Transvaal and Orange Colonies. Mr. Bleloch shows, by unquestionable facts, that the underground wealth of the two States, especially of the Transvaal, is very great, and nothing more than just government and intelligent development are required to make them worth the heavy outlay we have incurred. That the Main Reef series of the Transvaal contains a source of wealth sufficient to pay any reasonable war debt and to support in peace and plenty a great population of workers, it can help to keep the old world industries busy for many years. We must refer to Mr. Bleloch's interesting and suggestive volume for the history of the gold winning enterprise, the result of which has been the production, directly or indirectly, of a system of monopolies, the impoverishment of no small number of Boers, and the enrichment of a small and unscrupulous minority at Pretoria. The agricultural value of both territories, as Mr. Bleloch proves, is considerable. Emigrants must be attracted to both the new Colonies, but especially to the Transvaal. The practical value of the book is much increased by illustrations, maps and diagrams."—**The Standard.**

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OPINIONS OF THE PRESS—Continued

"The new South Africa throws a flood of encouraging light upon the future. The treatise is obviously the result of much care, observation and experience, and is certainly not written in the interests of the great capitalists. By a process of scientific reasoning, based upon official returns and reports, Mr. Bleloch estimates the amount of gold available between Randfontein and Holfontein at £2,871,000,000. If this is even approximately correct, it is clear that a considerable proportion must come to this country in some shape or form. Sooner or later the goldfields of the Witwatersrand will be able to pay, without feeling it, much of the cost of securing food and economic government to the new Colonies."—**The Daily Telegraph.**

"Since Mr. Fitzpatrick's book, 'The Transvaal from Within,' no more important work on the condition of the country has been produced. Accompanied as it is by a great mass of information it will be heartily welcomed. Mr. Bleloch endeavours to equip us for the work of re-establishing financial prosperity. He agrees with Sir Robert Giffen that the undeveloped wealth of South Africa is enormous. He is confident that the wealth of the mines will rapidly establish a great system of agriculture and home industries, and, as an inhabitant of Johannesburg, recognises that the provinces should bear a portion of the war debt. We are told of the enormous trade England will be doing with South Africa in a few years. This admirably clear and thoughtful volume is deserving of careful study, and will have many readers."—**The Morning Post.**

"Mr. Bleloch's book is a storehouse of valuable and up-to-date information on the resources and the conditions of life and industry in South Africa. Whatever may be the reader's views on the main points in dispute, he will find it interesting, and when he has got to the last page he will put it on the shelf for future reference."—**The Daily Chronicle.**

"A striking forecast of prosperity and the means whereby it may be secured. Mr. Bleloch has compiled with immense labour and care a most masterly estimate of the prospects of our new Colonies. The unprejudiced reader, however cautious by temperament, cannot resist his mass of proofs fortified by expert and statistical evidence of every kind, and will be forced to realise the grand future to which the Transvaal and, in minor degree, the Orange River Colony are destined. Mr. Bleloch's suggestions, which combine broad grasp and minute details, will be of great value to every student of the complicated problem, from Lord Milner downwards."—**The Daily Express.**

"We sought no goldfields, we sought no territory. Nevertheless, as Mr. Bleloch well says, the British people, 'having laid the foundation of the future peace and prosperity of South Africa . . . may also fairly consider the advantages they have secured jointly for themselves, for the old population, and for the world at large, and they may fairly claim to have refunded, on account of these advantages, a fair and reasonable proportion of the cost.' Mr. Bleloch's book is an invaluable contribution to a most comprehensive subject, a perfect Bonanza mine of facts and conclusions, and a thoroughly statesman-like effort to grapple with the problems of Transvaal administration and finance in careful detail. The Orange Colony is also considered. Pages might profitably be devoted to discussion of any branch of Mr. Bleloch's theme; his book will take authoritative rank, and may well exercise notable influence. Its estimates of future prosperity, though enthusiastic, are temperate and conservative, and its practical proposals are conceived in a spirit of all-round fairness. Mr. Bleloch's mass of evidence should carry conviction to any but the most obstinate pessimist."—**The Pall Mall Gazette.**

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OF THE RAND

The quartz pebbles in the conglomerate can be seen in the photograph. [Meyer and Charlton Mine.]

THE
GEOGRAPHICAL HISTORY OF AFRICA

BY
H. H. HARRIS



NEW YORK
PUBLISHED BY THE
AMERICAN GEOGRAPHICAL SOCIETY

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THE NEW SOUTH AFRICA

ITS VALUE AND DEVELOPMENT

BY
W. BLELOCH

With Illustrations, Maps, and Diagrams

SECOND EDITION, REVISED



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1902

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AUTHOR'S NOTE

TO THE SECOND EDITION

At last the Boer leaders appear to see that the interests of their race demand a cessation of hostilities, and the discussion of Peace with their attenuated commandoes has culminated in the general conference at Vereeniging. The pity is that this discussion did not take place a year ago, and the blame for the wasteful delay which has occurred must be shared by Mr. Kruger and his intriguers in Europe, and by Mr. Steyn and his following in South Africa.

Since the issue of the first edition a year has gone by, leaving on one side a record of further destruction and ruin for the misguided Boers who continued fighting, and, on the other, a record of progress for British Transvaalers and such of the Boers who, by choice or accident, have come under and accepted British rule and influence. It is to be regretted that the year has not been wholly spent in rebuilding the shattered fabric of South African prosperity to the benefit of Briton and Boer alike ; still it must be gratifying for British people to know that after all their steadfast efforts, and side by side with Lord Kitchener's army, the *Pax Britannica* has been invading and conquering the country.

Substantial progress has been made in laying the foundations of future greatness of the new Colonies. Although the prolongation of the War has involved an additional loss of many valuable lives as well as a vast expenditure of treasure, it is well to remember that the ends gained are worth the sacrifice. Not only is there the gain of justice and honour vindicated and the peaceful progress of the race in South Africa assured, but also the gain of security and preservation to the people of the British Isles

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themselves. Some, representing probably a small minority, have taken exception to what is styled the optimism of the phrase, "England has entrenched her position among the Nations by the War in South Africa" in the introductory chapter. But the more the lessons of the War are studied, the more evident and forceful does this truth appear. It required such a War to show the British people at once their strength and their weakness. In a practical manner it has called forth the powerful unity of the Empire, and manifested in a glowing light the weakness of a defective system of defence and war. British statesmen, at home and in the Colonies, have been showing that men are fully alive to these facts, and are shaping their policy accordingly. Already a new and wider conception of the British birthright is entering the minds of the people. It is coming home to them that the realms of the King, whether in the United Kingdom or at the opposite ends of the earth, are theirs in joint tenancy, to be used to further the advancement of the race. England belongs to the Colonies quite as much as the Colonies belong to England. A determination is springing up to hold on to, and be worthy of, the great inheritance which has been handed down through centuries of energy and fortitude. As a first consequence the idea is gaining ground that, while a small, highly-trained army of professional soldiers may be usefully maintained for carrying war into an enemy's country, every able-bodied citizen must be made a capable defender of his land and home. Training for war must be regarded as a duty and a necessary function of the whole nation, and must not be allowed to become solely the part-pastime, part-profession of a class. To rally and to unite a world-spread race, and to awaken in its heart the Imperial will to live, were aims which probably never came into the minds of those entering into the quarrel; but these ends may certainly be classed among the chief of the many important effects of the Boer War.

The task of reconstruction in the new Colonies has been vigorously taken in hand with a success which, considering the continued state of war, says much for their recuperative powers as well as for the governing and organising abilities

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of the Administrator. Lord Milner has begun by encouraging the resumption of industry wherever possible, and by organising new government departments charged with the development of the natural resources of the country. He has pushed forward the repatriation of expelled Uitlanders, and at the same time has given attention to the interests of surrendered burghers. He has established schools, workshops, and agricultural farms, and while thus looking to the present and future advancement of the newly forming people, he has also been making provision for their future government.

Thoroughly convinced that for some time to come the country must be governed as a Crown Colony, Lord Milner has yet so arranged that in default of representative government the people will at least have government representation. This he has brought about by the constitution of committees and commissions to inquire into various laws which appear to require revision and into other questions of public importance. To serve on these commissions he selects men from among the people in such a way as to secure that nearly every class and interest is represented. In like manner he has nominated Town Councils for Johannesburg, Pretoria, and other towns, charging them with municipal control, and conferring powers of local taxation and government. In this way the people work for their own advancement. The chief difficulty appears to be to get men to undertake the work involved; under the old government the opportunity was lacking, and the desire for public life appears to have partially died out.

In his speech to the Johannesburg citizens in January, Lord Milner chiefly spoke as to the duty of their bearing a hand for the general good, setting a high aim for the future of their city, and asking them to work steadily onwards for its achievement. In the same speech he expressed his confidence in the capacity of the country, with its extraordinary mineral wealth, its fruitful soil, and its healthy climate, to nurture and sustain a great population.

One of the principal objects in writing *The New South Africa* was to convey to those who had not lived in the

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country, but who had undertaken a great war on behalf of its future, some idea of its great natural resources. To this end estimates of the value of its Gold, Coal, and other Minerals were made from data available at the time of writing. So enormous was the value of the gold resources brought out, that much criticism of the unbelieving type was fully expected. But the event has proved that little criticism of this nature has been forthcoming. After a year's further study, it may be safely stated that the conclusions arrived at are likely to be fully realised. In August 1901 and in January 1902 the reefs were cut in the Turf Club boreholes; and although the actual assay results are not so good as might have been expected from the records of the outcrop mines, the ore bodies are of payable grade, and their continuity to a depth of nearly 5000 feet is conclusively demonstrated. Measuring along the plane of the reef, these results may be taken as proving the ore bodies for over 10,000 feet, of which only a very small portion has been exhausted. Apply this figure of practically two miles of dip to the ten miles of the Central Rand only, and some idea of the importance of the "strike" will be obtained. The assay results of the eastern boring indicate an extraction value of 36s. 3d. per ton for the South Reef and about 28s. 9d. per ton for the Main Reef leader, while in the western the record is not so good. Even in the richest outcrop mines poor zones are encountered (as well as conversely rich zones in poor mines), and, in any event, a core assay is no safe criterion of value of large blocks of ground. Future results will probably confirm the general average of 41s. per ton taken in Appendix B for this particular section of the Rand.

Other discoveries have lately been made which tend to show that new lines of banket reefs may be opened up, and on the whole the evidences are such that it may be confidently expected these new lines of reef, besides making up for any possible shortcomings of the Main Reef series, will probably swell the actual returns far beyond the great estimate given of the gold-producing value of the Rand. Vigorous exploratory work is about to be commenced on

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both the eastern and western extensions of the Main Reef series. In the far eastern section of the Rand the Modderfontein Deep Levels Company struck reefs officially correlated with the Van Ryn series at a depth of about 3070 feet in February 1902.

Some confirmation as to the estimates of the Rand output in the next few years is furnished by the statement of Mr. A. R. Goldring, Secretary of the Transvaal Chamber of Mines, before the Water Supply Commission, that within five years there will be 17,000 stamps running on the Rand, turning out gold to the value of between £50,000,000 and £60,000,000 a year.

The appointment of a Commission to inquire into the working of the Gold Law is likely to result in such reforms as will make prospecting practically "free" and, which is equally important, inexpensive. Lord Milner has said that, "Not only the prosperity of the great industry of the country, but the financial position of the Government, depend on our being able to frame a law on this subject, combining encouragement of mining enterprise with a due regard for the rights of the State, and the share which it ought to receive of the produce of the mines." The importance of this Commission's work cannot be over-estimated. Free prospecting will almost certainly have the effect of opening up new fields, not only in the Southern Transvaal, but also in other localities remote from the present working goldfields. "While the expansion of the gold industry on the Witwatersrand is certain," says the Commissioner of Mines, "the future of mining in the outlying districts will largely depend upon the introduction of a mining law which will give greater facilities and hold out greater rewards to the individual prospector and the small capitalist." The report of this Commission will be awaited with considerable interest, as, if eventually endowed with the force of law, it will have vital and far-reaching influence upon the future of the Transvaal Colony.

The Rand mining industry is making rapid advance to the position it had attained prior to the War. Milling was commenced by three companies in May 1901, and in the

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table which follows are shown the monthly crushings and outputs, together with the number of stamps employed :—

Month.	Com- panies.	Stamps.	Tons Milled.	Ounces Fine Gold.	Value.
1901.					
May . . .	3	150	15,306	7,479	£31,271
June . . .	7	350	40,111	19,779	84,014
July . . .	7	365	46,436	25,960	110,269
August . . .	7	380	47,365	28,474	120,953
September . . .	8	414	53,187	31,936	135,654
October . . .	8	440	54,908	33,393	141,848
November . . .	10	554	67,882	39,075	165,986
December . . .	12	653	86,811	52,897	224,702
1902.					
January . . .	21	1075	143,756	70,341	298,786
February . . .	22	1260	158,151	81,405	345,782
March . . .	29	1540	211,727	104,127	442,303
April . . .	31	...	...	119,588	508,000

Substantial dividends have been paid by several companies, though these have been in part in respect of profits earned before the War. It is expected that by July half the industry will be at work again, while it is not too much to hope that, given favourable conditions, including that prime necessity, adequate native labour, all the mills will be running at nearly full pressure ere the third anniversary of the outbreak of War comes round, while by the end of the year all the 6000 stamps erected should be working again.

The important question of the regulation of native labour has been solved by Sir Godfrey Lagden, and the draft laws promulgated in December 1901 may be described as favourable both to the mining industry and to the Kaffir himself. One of the regulations prohibits the supply of liquor to natives under severest penalties. Hitherto the penalty was a fine, now infractors of the law will be punished by imprisonment. A sense of added security and fairer treatment has been created in the native mind by the regulations providing for the licensing of labour agents and compound managers, who now carry on their work under strict legislation, securing the native from coercion and fraud. Instead of one group of mines competing against another for natives,

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the Witwatersrand Native Labour Association will work in the interests of all to bring natives to the goldfields under the auspices and control of the authorities. Drunkenness among mine Kaffirs has been, it is most satisfactory to add, practically abolished, but doubtless the illicit supply of liquor is a matter which will need most careful watching directly the military restrictions on immigration and supply are relaxed.

Estimates given of the extent and value of the coalfields remain unchallenged, as does also the description of the other mineral resources of the country. Important developments are expected in gold dredging and in digging for alluvial gold.

To pass from mineral questions to matters of agriculture and stock-raising. Some still refuse to believe in the capabilities of the new Colonies in respect of these two industries, both of which are highly important and necessary to the permanent success of the people. The attention of these unconvinced readers may be drawn to the difficulty experienced by Lord Kitchener in reducing the stores of the Boers remaining in the field. Their wealth in cattle, horses, and sheep has surprised every one, and were a schedule made, the figures would be all the more convincing. The marvellous fertility of their land has kept the Boers going : as soon as one crop of mealies was destroyed another arose in its place. Sceptics may also consider the marked success of the Government agricultural farms.

Practical proofs of the great future of Agriculture in South Africa are afforded by the results obtained by the departments of military and civil Government farms. Both departments have been remarkably successful—and this despite the hindrances inseparable from a state of war—and a visit to the present Government farms would convince even prejudiced pessimists that farming can be made a great success. There were at the end of 1901 seventy farms under the Military Department (organized by Colonel Morgan), with about 5000 acres under cultivation, the largest group being in the neighbourhood of Pretoria. The farms, stretching from Wonderboom Poort for some miles along the Aapies River, show a wealth of production such as I have never before

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witnessed in the country. Civil farms, under the direction of Mr. Hamilton, have proved equally successful from both a productive and financial point of view.

Regarding irrigation, attention may be directed to the summary of the conclusions arrived at by Mr. Willcocks, the expert invited by Lord Milner to report on this vital matter, appearing at p. 181.

Having due regard to the condition of the country, the revenue accruing to the Government can be styled satisfactory. As to trade, the Transvaal Customs returns for 1901 show the value of goods imported into the Colony (excluding free importations on Government account) at £3,664,149, while for the first three months of the current year the amount is one-half, viz. £1,805,023. In these days of American competition—and one writes just as the Atlantic “combine” has been concluded—it is satisfactory to note that a strong effort is to be made by British traders to enter more largely into South African markets at the close of the war. A powerful committee has been formed, and delegates will visit South Africa under the *ægis* of the Colonial Office.

Since the first edition was published, the report of Sir David Barbour upon the finances and resources of the new Colonies has been made public. If the main principles of taxation laid down by him are consistently carried out, the revenue will soon grow sufficiently to bear charges of any reasonable share of the War Debt which may be allotted to the two Colonies. Sir David Barbour's recommendations tend towards the lightening of the burden on industry, instead of taxing results. This policy will inevitably widen the basis of prosperity, and give the whole body of people the chance to share in the great national wealth, thus fitting them to carry any burdens which their duty to the Empire may demand. Further, it will enable the Government to avail themselves of a portion of the mineral wealth, which may be applied to the fostering of agriculture and other permanent industries. It is anticipated by the authorities that the revenue of the Transvaal for the year ending June 1901 will reach £1,200,000, and for the following year may be between £4,000,000 and £5,000,000—assuming that the

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railways can be handed over to the Civil Administration. In 1901 the Customs revenue represented $13\frac{3}{4}$ per cent. of the value of imports. It is to be hoped that early attention will be given to tariff revision and reduction on the lines and following the principles laid down by Sir David Barbour, that duties should be removed from all common and necessary articles of food.

One of the important commissions set to work by Lord Milner is the Land Settlement Board, charged with inquiry into the best means of settling British farmers on land in the Transvaal. The Board has collected a mass of information for use when the actual settlement can be begun. Two Government officials have recently been appointed, one to organise the settlement of British people on Government farms, the other to organise the repatriation of the Boers. Both are advised by the Land Settlement Board. In the Orange River Colony even greater progress has been made; some settlements are already organised, and work commenced.

Lord Milner has given his attention to railway extensions, and it is announced that among the first of these will be a line connecting the two industrial capitals of South Africa—Johannesburg and Kimberley. The project will be undertaken as soon as the time is opportune. Its accomplishment will reduce the distance between the towns by more than half (for the present circuitous route is 660 miles), and give an alternative line to the Rand from the Cape Colony. An article discussing the railway development of the Transvaal, in the *Engineering Magazine*, proposes the construction of $445\frac{1}{2}$ miles as a *minor* scheme at a roughly estimated cost of £3,560,000, or $795\frac{1}{2}$ miles on a *major* basis at an expenditure of £6,360,000. The progress made by the Imperial military railways is remarkable; approximately 1500 miles of track are under control, and over 4000 men are employed.

Signs of return to normal conditions become increasingly evident. The Registration Office for the transfer of property is to be opened shortly, while the High Court has been constituted and has commenced its sittings.

In conclusion, the opinion may again be expressed that

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when once the Boer nation has definitely given in, it will unite with their former foes in pushing forward the interests of the New South Africa. The race hatred, so frequently spoken of, has never been apparent to the writer after a life among the Boers of over a dozen years. The quarrel has been national, not individual.

Progress, such as has been made and described during a year of harassing guerilla warfare, with the railway lines blockhoused and the traffic in the hands of the military, must be looked upon as highly encouraging. It goes far to bear out the tale of available resource and revenue told in *The New South Africa*.

Throughout the book a few alterations and corrections have been made. In some chapters new facts are given, and changes have been made in the text where later information has become available. The more important changes occur in the chapter upon the Witwatersrand Goldfields. Being practically the first attempt to give comprehensive information of the resources of the two new Colonies, it will be conceded that absolute accuracy could not very well be attained. The indulgence of readers is craved for any shortcomings in this revised edition, and it is hoped that the same friendly criticism will be accorded to it as the first had the good fortune to receive.

W. BLELOCH.

^a LONDON, *April* 1902.

AUTHOR'S NOTE

TO THE FIRST EDITION

AFTER so many books dealing with South Africa have been brought before the British people it may be thought that the subject has been exhausted, but the volumes that have hitherto appeared have been mainly concerned with the War and the past. The present book looks to the future. The title, "The New South Africa," has been chosen because it best indicates the purpose, viz. to show the Empire's new field of enterprise in the Colonies recently acquired, to describe their vast resources, and point out their possibilities under free development by vigorous British communities. In the abstract the title is equally suitable. The changes which will ensue through enlightened government in the Transvaal will be so great, that they will affect the older Colonies as well. All will share in the coming progress. Not alone will a new Transvaal and a new Orange River Colony be created, but there will be a new South Africa.

This subject is of the utmost importance to the new Colonies, and of almost equal importance to the Empire; and the facts and ideas put forward, roughly and inadequately expressed as they may be, are presented in the hope that they will gain the interest not only of South Africans, but also of the people of Great and Greater Britain.

Before letting the book leave my hands I desire to thank all friends who have assisted me, those who have made actual contributions, and others who have placed at my disposal valuable information and documents. My thanks are specially due to :—

Mr. David Draper, F.G.S., Secretary of the Geological Society of South Africa, who has written the chapter upon

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the Mineral Resources of the Transvaal other than Gold and Coal, and furnished the geological sections of the Witwatersrand, with accompanying description.

Mr. Minett E. Frames, F.G.S., who has provided the geological plan of the Southern Transvaal.

Mr. W. P. Fraser of Johannesburg, for several contributions on the land settlement and Swaziland.

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The attention of those interested in immigration is directed to Appendices G and K.

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CHAPTER I

INTRODUCTORY

THE War in South Africa is reaching its final stage, with the result of the addition to the Empire of two territories together nearly equal in extent to Spain, and a beginning has been made in establishing the new order of things under the Imperial Government. It may therefore be of interest to many to have some information about the new countries, their capabilities, their value, and their present condition.

The War has already cost Great Britain an enormous price in lives of men and treasure, and the question which many citizens of the Empire may ask is, "What have we got for it?" To the great majority the answer is evident. The successful result of the War, by removing a danger which disturbed the working out of the destiny of the British race in the world, has fully justified the cost. Obviously the main consideration is security and strength restored through our having repulsed an attack on one of the principal fortresses of our civilisation. The War has been fought to establish principles of equality and liberty for the white races in South Africa, and to prevent the continuance of the condition of subjection in which the Queen's subjects were held; a condition which threatened the stability of the Empire; and which might, with European complications, have eventually led, if not to its overthrow, at least to a desperate life-and-death struggle. England has entrenched her position among the nations by the War in South Africa. The strength of defence under modern conditions of warfare has been made evident. The passes of North-West India have been fortified in the battlefields of Magersfontein and Colenso. Menace and hatred from armed Europe to England weak are already changing to respect and goodwill to England

strong. The War, costly as it has been, may have taken the place of one more costly still, and there is no doubt that, in spite of the defects of the army and its administration, it has added enormously to the real military strength of the Empire.

The War came none too soon, and if the event had been delayed, the cost of between a hundred and fifty and two hundred millions might easily have been exceeded. The ultimatum, followed as it was by the triumphant invasion and annexation of British territory, disclosed the ambitions and strength of the Republics, and roused the whole Empire to a knowledge of the danger, and to a determination to combat the attack.

No one doubts that the results of the great wars with France have fully repaid the enormous sacrifices made by our forefathers, and to-day we have been fighting for essentially the same principles for which they fought then—the right to live our lives in the world without fear of tyranny or subjection; the right to repel any attack on the constitutional liberty and justice which we have made the basis of our civilisation. To do this without interfering with others outside our sphere, but at the same time to allow no others to interfere with us.

In South Africa British civilisation was threatened with eviction. If the attack which followed the threat had succeeded, its place would have been taken by an inferior and retrograde civilisation, and by so much would the progress not only of our own, but of the whole white race have been retarded. Instead of the old population progressing, the new population would have been dragged back. If, therefore, the whole cost of the War had to be borne by the British people, they would have gained by having kept intact that force in the world which is theirs, and which it ought to be their steadfast and proudest aim to maintain. The Government has only now to strengthen that force; by gently but firmly leading the old population into line, and, by means of just treatment, equal laws, and wise administration, gradually bringing about a fusion of the two races into a nation which may eventually take high place in the Celto-Anglo-Saxon

brotherhood. The successful accomplishment of this will depend not a little on the measures to be taken for the development of the material resources of the country. If the population be made contented and prosperous many difficulties which at present seem insuperable will gradually disappear.

But having paid for the War and gained these great ends, and having laid the foundation of the future peace and prosperity of South Africa, the British people, although entitled to be well satisfied with their work on these grounds alone, may also fairly consider the other advantages they have secured jointly for themselves, for the old population, and for the world at large, and they may fairly demand to have refunded, on account of these advantages, a fair and reasonable proportion of the cost. Great Britain pursues no dog in the manger policy. Where her flag flies the door stands open, and it is only right that the material benefits won for all should in part be applied to the repayment of the cost of securing them. The countries now to be set open under good and enlightened government to the enterprise and energy of humanity are rich. Besides supporting a prosperous population and repaying tenfold any capital judiciously invested in them, they can easily supply sufficient revenue to pay for their own government and provide a surplus to repay any reasonable part of the great sums that have now been expended on them.

IN THE TRANSVAAL.

Under the old Government the sources of wealth in the Transvaal were thrown almost wholly into the hands of monopolists, while the inhabitants, Boer and Uitlander alike, made little headway. A number of Boers were spoiled by easily obtained wealth derived from the option moneys and purchase prices paid for their gold farms; the Government, too busy devising means for enriching themselves, neglected the others and left them to lapse gradually into poverty and ignorance. From time to time they sought a remedy for this by providing the burghers with doles of money, mealies, and donkeys. The

class of *bywoners*¹ and poor whites was continually growing ; some of these drifted to the goldfields, to fill the slums of Vrededorp and Burghersdorp and obtain a precarious living by breaking stones on the Main Reef Road or other similar labour ; others remained on the farms of their wealthier relatives, to drudge and slave for the miserable pittance which falls to the *bywoner*. No encouragement was given to enterprise in agriculture. Peaches grown close to the railway line were allowed to fall from the trees and rot because the rates charged by the monopolist company were too high to allow them to be brought profitably to market. Mealies and flour were brought from the ends of the earth to feed the working people of the Rand, while millions of acres of rich land only requiring moderate expenditure for irrigation were allowed to lie unproductive. Wealth and extravagance reigned at the capital, and too often squalor and disease on the farms. In the rich district of Rustenburg, along some of the most fertile valleys, a state of misery could be seen in the homes of the *bywoners* equal to anything to be found in the great cities of Europe.²

On the other hand the Uitlanders were equally in a bad way. The gold laws were framed so that a man with an ordinary capital was almost certain to be ruined if he invested his money directly in the gold industry. If he pegged out prospecting claims, heavy initial charges and claim licences were demanded, leaving him, as a rule, little wherewith to develop or prospect his property, and in most cases he had eventually to abandon it to some one richer than himself. If he invested in shares, the frequent depressions of the market, caused by recurrent periods of unrest, almost invariably left him stranded in a few months' time. If he went into trade, he had to pay heavy railway rates and import duties, besides trading licences. The profits not swallowed up by these charges were sure to be reduced from time to time by the periods of stagnation of trade resulting from the unsettled state of the country. The only trading class that waxed rich and comfortable with any degree of certainty

¹ *Bywoner*=squatter, tenant at will.

² See Appendix G.

were the dealers in illicit liquor. The skilled workman on the mines, it is true, was well paid, but the cost of living was proportionately high, and he too from time to time was liable to lose his savings if he speculated in shares. Some who were cautious gradually acquired wealth by investing their surplus money in town property or by sending the money home to Cornwall or elsewhere.

For these reasons the resident inhabitants of the gold-fields, who have had a great share in creating the chief industry of the country, have never had the stake in it that they are fairly entitled to. Capital has done its part, and admittedly has done it well, but the physical nature of the fields, sufficient alone to secure the lion's share for Capital, has, assisted by the gold laws of the country, secured for it a position of all-powerful monopoly which is not beneficial to the community. The vast wealth of the Witwatersrand, as at present proved and known, is controlled by eight great financial groups. Three of these control between them interests of a capitalised market value of nearly £100,000,000—the house of Eckstein, £66,056,214; the Consolidated Gold-fields, £23,743,195; and the Farrar group, £7,275,617.¹

Immediately outside the Rand there are large areas of problematically high value, for there is the possibility that they may contain the extensions eastwards and westwards of the Witwatersrand auriferous conglomerate beds. These are for the most part unprospected, but they might eventually prove to be equal in value to that part of the Rand now being worked. The gold rights over these areas are fortunately still in the hands of the Government.

There are other districts outside the Rand where gold-mining has been carried on in the past with varied success. On some of these, as at Pilgrim's Rest, a considerable population used to live and thrive by digging for alluvial gold; others worked rich quartz leaders and reefs. The old digger population of these fields has almost disappeared, and there are now only a few mines, owned by wealthy companies, which continue working. The causes of this state of affairs are mainly to be found in the faults of administration

¹ *African Review*, November 9, 1901.

and legislation of the late Government, which neglected to encourage individual effort, and thus promote the establishment and growth of mining villages throughout the country. If such villages had been in existence in these outside districts they would have afforded markets where the surrounding farmers could have sold their produce, and they would have greatly assisted in bringing about more general prosperity.

Besides the gold industry there are other mining industries which have been neglected, and even discouraged by the Government. The diamond mines waited for two years to have the rights of the discoverers confirmed and defined. The development of the great coalfields of the Transvaal has been delayed by the want of railway facilities, refused in order to pamper the Netherlands Railway monopoly. The rich iron ores of the Middelburg and Pretoria districts have remained unworked because iron smelting and founding have been prohibited for years, except to the holders of the iron concession. Valuable lead and silver mines are unworked because the ore cannot be smelted for want of coke, plentiful and cheap supplies of which would be available if the coal industry were developed. Generally all the mining industries of the country have suffered from unwise, and even criminal, legislation, passed to bolster up monopolies.

The same can be said about the manufacturing industries. In nearly every case where the requirements of the country are favourable to the creation of a manufacturing industry, the sole right has been given to some concessionaire. The greatest abuses of Government control over trade and industry are exemplified in the Dynamite Monopoly, the Drink Concession, and the Netherlands Railway, all of which have had a disastrous effect, by hindering the prosperity of the country solely for the benefit of individuals.

The succeeding chapters will be devoted to an endeavour to contrast the past deplorable state of the Transvaal with what it should and will be under an enlightened Government. The aim is to give an account as reliable as possible of the resources of the country and the best means of

developing them—an idea of the approximate value of the Witwatersrand goldfield from the data supplied by past working—the value of the Bewaarplaatsen¹—the probable value of the outside Rand still unprospected and unproclaimed—the value of quartz reef mines in districts other than the Rand—the bearing of the gold law—the expediency of leaving the present mining companies without interference with their rights already secured—the advisability of changing the law in respect of all properties where the gold is still in the hands of the Government—the changes in the gold law necessary to bring about a rapid development of new mines and new districts in the manner best calculated for the benefit of the people, which will best secure to Great Britain a speedy repayment in part of its present outlay without creating heavy burdens—the Dynamite Monopoly—the value of the coal, iron, silver, lead, diamond, and other minerals, and the opportunities they offer—the Netherlands and other railways—the condition of agriculture and irrigation, tobacco and fruit growing, stock raising—the opportunities for immigration and the prospects of immigrants—the condition of the natives—the best means of encouraging the Boer population in their own industries, and gaining at the same time their support to the Government—the fiscal policy—what proportion of the war debt the new colonies can pay without overburdening the people.

THE ORANGE RIVER COLONY.

This colony will be considered in the last chapter. Some of the suggestions for solving the problems discussed in the chapters on the Transvaal are to a certain extent applicable to the Orange River Colony, but the old Free State Government was conducted on much better principles than that of the Northern Republic, and consequently there is not so much to pull down and build up again. A concise account is given of its agricultural and mineral resources, and its white and native population.

¹ *Bewaarplaatsen* = reserved places. See Chapter VII.

The book is an unofficial prospectus of the work which lies before the British administration in the new Colonies ; an endeavour to interest the public mind in the problems presented. It is written in the hope that the facts adduced and the ideas suggested will call forth an intelligent criticism, which may lead to good. The work which lies before Great Britain in South Africa is similar to that which she has so successfully carried out in Egypt, but in this case she will have no outside interference. Fortunately, the administrator appointed is an expert trained in that country. If Lord Milner produces a result in South Africa equal to that which he has so brilliantly described in his book "England in Egypt," he will have fully succeeded. He has this advantage, that if there is corn in Egypt, there is corn enough and gold besides in the Transvaal.

CHAPTER II

THE WITWATERSRAND GOLDFIELD

SINCE the discovery of gold in the Transvaal, gold-mining has become by far the most important industry of the country. Before gold was found, industry was limited to agriculture and stock raising, and commerce was represented only by the trade and barter which the up-country store-keepers carried on with the farmers. When the greatest gold-mining industry in the world became firmly established on the Witwatersrand, the old industries began to grow in value, and new ones sprang up, even in spite of restrictive legislation. Transvaal commerce was beginning to attract the competition of all the great trading nations, and the country grew so rapidly in importance, that the Government thought it was big enough for anything. The principal interest centres, therefore, in the gold industry. It is the great motive force of industrial and commercial life, and any inquiry into the resources of the country may best begin with gold.

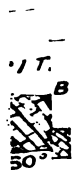
Gold was known to exist in the Transvaal as long ago as 1845, but the first goldfield of real importance was that opened in the Lydenburg district in 1872-73. The Barberton fields were declared public diggings in 1884, and about the same time Mr. Struben discovered the auriferous character of the Witwatersrand conglomerates. In 1886 the Witwatersrand district was proclaimed a public goldfield. Other discoveries were made before and after this of gold-bearing quartz reefs. In the Zoutpansberg district, the Woodbush, Klein Letaba, and Murchison fields were thrown open. On the western border the Malmani district was prospected, and found to contain promising quartz lodes with visible gold. Extensions of the auriferous conglomerate of

the Rand were found near Potchefstroom and Klerksdorp on the west, and near Heidelberg and Hex River on the east.

Owing to the great richness of the conglomerate beds near the centre of the Witwatersrand, attention was soon concentrated on that area, and several of the mines were established whose fame has since spread all over the world. The Robinson, the Ferreira, the Crown Reef, and others speedily showed that this was a field which bid fair to take a leading place among the world's goldfields. Yet there were few then who imagined that the Rand¹ would in fifteen years eclipse all rivals, and even now they are few who realise its immense and astounding capabilities. The amount of coined gold in the world is estimated to have doubled itself in the thirty years between 1860 and 1890, and to have been at the end of that period about £736,000,000. The amount of gold within the range of practical mining in the Witwatersrand district of the Transvaal is probably four times that amount. Enough to provide each human being in the world with a couple of sovereigns to jingle together, and still leave a reserve for the specially fortunate. The fear is entertained by some that the vast stores of the metal about to be extracted from the Rand may cause its value to depreciate, and its purchasing power to decline to such an extent that the exchange may no longer be remunerative—that the experience of the depreciation of silver through over-supply may find its counterpart in the case of gold. This, however, is a fear which need not be seriously considered for many years to come. If ever it is realised, it will be mainly through the enormous production from the Witwatersrand conglomerate.

The main geological features of this wonderful formation and its relative position may be thus briefly described. The basement rock appears to be the granite which is found outcropping a few miles north of Johannesburg. Shelving up towards the granite there is a succession of quartzites and shales known as the Hospital Hill series, a name given because the hill where it is most prominently exposed runs directly behind the Johannesburg Hospital. Then

¹ *Rand*, Dutch word meaning "ridge."



THE WITWATERSRAND GOLDFIELD 11

come the beds of the Witwatersrand series, quartzites and conglomerates, with the same sloping dip to the south. Next in succession is an intrusive rock known as the Klip-riversberg amygdaloidal diabase, which has been erupted later than the period of deposition of the Witwatersrand series. Resting on this diabase at some places, and at others on the Witwatersrand rocks, there is another small series of conglomerates and quartzites known as the Black Reef formation. This formation is unconformable to the Witwatersrand series proper. At some places it completely covers the upturned edges of the older series, but at others, as along the Rand at Johannesburg, it is worn away and leaves them exposed. It is like an old mantle, through whose worn-out patches one can partly see what lies below. Above the Black Reef formation is a thick bed of dolomite, and then the rocks of the Gatsrand. These latter are represented on the north by those of the Magaliesberg,¹ and there is little doubt that they at one time covered the whole anticline of the Rand, the crest of which is now denuded.

The Witwatersrand series is the formation to which the greatest interest is attached, as it contains the auriferous conglomerate beds which constitute the main wealth of the Rand and of the Transvaal. Professor Becker of the U.S.A. Geological Department, along with other geologists, considers² that the material of the Witwatersrand series was deposited off a subsiding shore. Mr. Wilson Moore³ states that "there is no necessity to look further abroad for a solution of the origin of the gold in the banket⁴ beds than older auriferous quartz reefs which have been denuded and deposited on a receding coast-line." Both, therefore, believe the gold-bearing conglomerates to be ancient marine placers, and this view is probably correct. The gold is contained chiefly in a series of quartz-pebble conglomerate beds occupying a position near the base of the Witwatersrand formation. These beds are locally known and spoken of as "reefs," although they are in nowise "reefs" in the true sense of the term. The particular series which

¹ *Berg*, Dutch word meaning "mountain."

² "The Witwatersrand Banket," G. F. Becker, p. 15.

³ "Geology of the Rand," Wilson Moore. See Goldman's "South African Mining and Finance," vol. i. p. 28.

⁴ *Banket*, Dutch word meaning "almond rock."

contains the most of the gold is called the Main Reef series. This series comprises three, and on some properties four beds, all more or less gold-bearing. While the series may be said to be permanent throughout the Rand, it is doubtful whether any one bed continues for more than a few miles. Still, "the stratification is so perfect," says Professor Becker,¹ "that a single pebbly stratum only a few inches in thickness can be traced for many thousand feet, and perhaps for miles along the strike²;" and again,³ "It appears to me that the beds of conglomerate form a group of many flat lenticular masses, any one dying out in strike, but usually being replaced in the floor or roof by an equivalent bed." Whether this description of the conglomerate beds as a number of flat masses not absolutely continuous but dovetailing over one another is correct or not is of no consequence, the main fact being the permanence of the gold-bearing series as proved by actual work over a distance along the strike of more than fifty miles. As to their permanence in depth, one authority already quoted says,⁴ "There is little doubt that exploration of the Witwatersrand can be pushed to a depth of 5000 feet," and the other is of opinion⁵ "that the beds and their contained gold will last to depths, and at the same average grade of ore contents, beyond those at which man will find it possible to profitably exploit them."

These opinions have since been borne out to a great extent by actual proof. The first deep borehole was put down on the Rand Victoria Mine at a point 4400 feet south of the outcrop on the Simmer and Jack. This borehole cut the South Reef at a depth of 2343 feet, the assay value being 1 oz. 4 dwts. The Bezuidenville borehole, put down at a point 5800 feet south of the outcrop in the Meyer and Charlton mine, cut the reef series at a depth of 3250 feet.

The two shafts in the Robinson Deep mine cut the South Reef at a depth of 2385 feet and 1806 feet respectively. The South Reef in No. 1 assaying 5 oz. over a width of 6 inches, in No. 2, 3 oz. over a width of 12 inches. Here it may be explained that the Main Reef series consists of several reefs

¹ Becker, *op. cit.*, p. 14.

² Strike = direction of outcrop.

³ *Op. cit.*, p. 11.

⁴ *Op. cit.*, p. 7.

⁵ Wilson Moore, *op. cit.*, p. 28.

or beds of quartz-pebble conglomerates. The most important of which are:—First, the Main Reef, a body from 3 to 12 feet thick, but low grade, assaying from 3 to 9 dwts. per ton; second, the Main Reef Leader, about 3 feet thick on the average, and payable practically throughout; third, the South Reef, thinner but richest of all. In many of the mines only the Main Reef leader and the South Reef are worked, the Main Reef being left as unpayable. The Bezuidenville borehole proved an average dip from the outcrop of 27 degrees, although at the outcrop mine the dip was 45 degrees. Along the Central Rand other deep boreholes have shown the dip of the reefs, even where steep at the outcrop, to have flattened in depth to averages of from 25 to 30 degrees.

Deeper boreholes have been put down in the ground belonging to the Turf Club immediately south of Johannesburg. The distance from the outcrop is 8250 feet.

Early in August 1901 the reefs were struck in the Eastern boring. The South Reef was intersected at 4825 feet, and assayed 10.65 dwts. over 43 in., and the Main Reef Leader, 8.44 dwts. over 45 in. In January 1902 the South Reef was cut in the Western borehole at 4744 feet, assaying 6.17 dwts. for a width of 20 in.; the Main Reef Leader, found at 4842 feet, had a thickness of 25 in., of which 6 in. assayed 6.4 dwts.; the Main Reef was 80 in. wide, worth 6.5 dwts. over 34 in. On the whole the assays are disappointing, and far inferior to what might have been expected, having regard to the richness of the outcrop mines in the neighbourhood. Still the great fact is the conclusive, definite, and practical proof of the existence of the reefs at these depths. Great and final importance must not be attached to borehole assay values.

The results from actual tests by boring are only what might have been confidently expected from the nature of the beds. Their extent being proved longitudinally for over fifty miles, it almost follows that their width must be proportionate to their length, and there seems little reason to doubt that the conclusion is correct which only limits the exploitation of the Rand to the ultimate depth at which modern mining can be carried on. The problem presented is similar to that offered by the deeper coal-mines in England, and has no

relation whatever to gold-mining in ordinary quartz veins. The accompanying geological sketch plan and sections will help to a correct understanding of the foregoing description.¹

The process of extraction has attained extraordinary perfection. On many mines 85 per cent.² of the gold contents of the ore is successfully and economically won. The process as now in practice on the Rand is as follows :—The ore after being brought to the surface is deposited on revolving tables where native workers pick out all the valueless pieces, which they easily identify from their containing no pebbles. The ore is then put through a crusher and reduced to a size not more than $2\frac{1}{2}$ inches square. It then passes to the stamp battery, and water being allowed to flow in as it is crushed, it is reduced to pulp. This pulp is run over copper plates amalgamated and covered with quicksilver. The free gold settles on the quicksilver, forming gold amalgam. This is scraped off from time to time and retorted, the mercury passing off in vapour and the gold remaining. That portion of the gold still covered by iron pyrites or other minerals, and thereby prevented from coming in contact with the mercury, passes over the plates and is carried by the water with the sands and slimes to large vats, where it is treated by the cyanide process. A weak solution of cyanide of potassium is pumped into the vat, and the cyanide dissolves the gold. After some hours the solution is drained off and caused to flow over zinc shavings, when the gold precipitates itself on the zinc in the form of a fine brown mud. This is smelted with suitable fluxes, and on cooling the gold settles at the bottom of the retort. The foregoing process is known as the M'Arthur Forrest, and was the one chiefly used for the treatment of tailings³ on the Rand. Within the past few years the Siemens-Halske process, by which the gold is deposited electrically upon strips of lead, has been installed at several mines.

On some mines the heaviest sands, consisting mostly of pyrites and gold, are concentrated and treated by chlorination.

¹ Pages 10 and 42.

² In 1898 the Bonanza mine recovered 93.19 per cent. of the gold contents of the ore milled ; this of course included yield from "slimes."

³ Tailings=sands and slimes.



PHOTO BY BERT'S BAY, OBERMONTAGNE

CRUSHING AND SORTING HOUSE, ANGELO DRIEFONTEIN MINES

THE WITWATERSRAND GOLDFIELD 15

The Witwatersrand gold industry has been built up by engineering skill, inventive genius, and a vast amount of hard work. The deeper levels could not have been worked but for the discovery of the cyanide process. The industry has been hampered by monopolies and political and other difficulties. Yet all these have been surmounted, and the men who have made the Rand are worthy of admiration. If some of them have looked well after their own interests in other ways, as will be shown to be the case, who can blame them?

ITS VALUE.

An inquiry into the value of that portion of the Rand which has been developed and worked for the last fifteen years no longer presents the same difficulties which would have been encountered even five years ago. The great progress which has been made in proving the deep levels, the tabulated results of past work, and many of the calculations of the eminent mining engineers who have been employed by the great financial houses, are available for those who desire to arrive at an estimate of what the Rand, as at present being worked, is worth, and it is possible now to arrive at an estimate approximately near the truth.

The State Mining Engineer's report for 1898 shows that the value of the total gold won in the Transvaal in the fifteen years 1884 to 1898 inclusive was £70,228,603.¹ Of this

¹ Gold outputs are usually declared in *ounces*, but it may be interesting to give here the equivalents in *tons* of the Rand gold production, together with the sterling values :—

Year.	Tons.	Cwts.	£
1887	0	15	81,042
1888	6	16	734,477
1889	12	18	1,389,030
1890	16	2	1,735,491
1891	23	15	2,556,328
1892	40	0	4,297,610
1893	48	5	5,187,206
1894	64	17	6,963,100
1895	72	18	7,840,779
1896	73	3	7,864,341
1897	98	8	10,583,616
1898	140	13	15,141,377
1899 (nine months)	say 131	0	14,046,686
1900 (by Boer Government)	say 26	0	2,697,173
	757	10	81,118,266

over 90 per cent. was contributed by the Witwatersrand. The total value of the output of the country for 1898 was £16,240,630; of this the Witwatersrand, Randfontein to Modderfontein, contributed £15,135,909. The number of tons of ore treated on the Witwatersrand was 7,308,415, of an average value of 41s. 6d. per ton. Twenty-six mining companies paid dividends amounting to £4,885,689, indicating a profit of 13s. 4d. per ton treated. The total expenditure by the Witwatersrand mines during 1898 for labour, material, food stuffs, and all items of working expenditure, was £10,086,215, which, if deducted from the value of gold won, viz., £15,135,909, leaves £5,048,694,¹ indicating a profit of 13s. 9½d. per ton treated. These figures may be taken to roughly indicate the average profit per ton on the Rand, the tonnage includes those mines which worked at a loss as well as those which showed profits, and they generally agree with the estimated average of the Rand arrived at by other methods.²

In the Central Rand the average is very much higher. From the Bonanza Mine to the City and Suburban inclusive, the average value per ton is somewhere between 60s. and 70s., and the average profit between 30s. and 40s. Other districts, again, are poorer. On the Bantjes Mine, for instance, is the centre of a poor zone on the Rand, and in the

¹ The dividends paid by Witwatersrand mines amounted to £1,444,338 in 1894; £2,119,412 in 1895; £1,430,982 in 1896; £2,817,005 in 1897; £4,827,810 in 1898, while during the half-year ended June 1899 (embracing the two last *normal* quarters), a total of £2,722,282 was distributed.

² The Chamber of Mines Report for 1898, p. 24, gives Mr. Rouliot's speech at the annual meeting held in Johannesburg, 1899, in which he says:—"The total amount distributed in dividends by forty mining companies out of seventy-seven contributing to the Witwatersrand output for 1898 is £4,834,160, or £2,120,590 more than last year, and being 31.93 per cent. of the total production, against 25.64 per cent. in 1897, equal to 13s. 2.2d. per ton milled, an increase of nearly 3s. over 1897. The deep levels contributed £995,000, or 19.75 per cent. of the total dividends paid, or at the rate of 13s. 7.3d. per ton milled. Whereas the costs in 1897 worked out at 29s. 9.7d per ton, they have come down in 1898 to 28s. 1.4d, or a decrease of 1s. 5.3d. per ton, pointing to a better efficiency in the methods of treatment and further economy realised in the working. As a matter of fact, the progress made is much greater than these figures would make it appear, for the deep levels show a very high cost of 34s. 6.1d., which swells the average; this high rate being due to the fact that they have been repaying debts, and completing their equipment out of profits." The Rand Mines last report of work done in 1899 shows that working costs had been reduced to 25s. 3½d. per ton, and the profits had at the same time proportionately increased.

Roodepoort district the reefs, although rich, are thin, causing working costs to be high, and tonnage per claim to be low. These factors have all to be reckoned in estimating the value per claim for the various districts of the Rand.

In Appendix B. there will be found a series of calculations made from the latest available data, as shown in Appendix A. The Rand, from Randfontein to Holfontein, a distance of over fifty miles, is taken, and its value estimated, area by area, according to the thickness of the reefs, and the tonnage per claim, the value per ton, and the profit per ton, as they are indicated from past working. Also account is taken of all other reliable data, such as the discovery and development of new reefs like those in the Randfontein district, the discovery and tests of the new areas proved to contain the continuation of the Main Reef series on the East and far East Rand, and a close estimate is made of what may be confidently expected in this great stretch of proved country. These calculations are put in an appendix at the end of the book for the reason that the statistical details required might weary many readers not directly interested in Rand mining. They are included in this book, however, because the extraordinary wealth they indicate might be disbelieved were the data on which the results are based not laid open for inspection by any who may desire to look into the facts for themselves. Were they not included, many might infer that the wealth of the Transvaal was being written up merely to dazzle the mind by the glamour of immense stores of treasure. Undoubtedly the treasure exists, and in such vast stores that the imagination is more likely to belittle the truth than the truth is to belie the imagination.

The table on page 18 shows the results arrived at.

In connection with the estimate of the Rand therein presented it must be borne in mind that—

(1) The profits per ton, per claim, and in the aggregate are based upon working costs obtaining before the War. Under the new *régime* these costs are estimated to be reduced from 5s. to 6s. per ton (see Chapter XVIII.).

(2) In the event of costs being so reduced, two im-

Section.	Area in Claims.	Estimated Average Dip.	Probable Depth to which Mining is Possible.	Estimated Milling Tonnage per Claim.	Estimated Value per Ton.	Estimated Profit per Ton.	Estimated Gold Value per Claim.	Estimated Profit Value per Claim.	Estimated Total Number of Tons available for the Mill.	Estimated Total Gold Value.	Estimated Total Profit Value.
		Degrees.	Feet.	Tons.	£. d.	£. d.	£	£		£	£
Randfontein	4,840	35	6,000	35,000	41 0	13 4	71,750	23,333	169,400,000	347,270,000	112,933,333
Lancaster—											
French Rand	2,210	30	4,000	20,000	34 0	6 8	34,000	6,666	44,200,000	75,140,000	14,733,333
Rondepoort	2,781	30	6,000	20,000	41 0	13 4	41,000	13,333	55,600,000	114,021,000	37,080,000
Vogelstruis—											
Main Reef	2,975	30	4,000	20,000	34 0	6 8	34,000	6,666	59,500,000	101,150,000	19,833,333
Langlaagte Star—											
Paarl Central	1,174	30	3,000	30,000	27 6	3 4	41,250	5,000	35,220,000	48,427,500	5,870,000
Langlaagte Estate—											
Crown Reef	1,215	30	6,000	45,000	41 0	13 4	92,250	30,000	54,675,000	112,083,750	36,450,000
Bonanza—											
City and Suburban .	2,700	30	7,000	37,500	60 0	32 6	112,500	60,937½	101,250,000	303,750,000	164,531,250
Meyer and Charlton—											
Witwatersrand . . .	8,700	25 to 30	6,000	40,000	41 0	14 0	82,000	28,000	348,000,000	713,400,000	243,600,000
Balmoral—											
Blue Sky	3,124	35	6,000	25,000	41 0	14 0	51,250	17,500	78,100,000	160,105,000	54,670,000
Boksburg—											
Apex Mines	8,000	20	6,000	17,000	45 0	15 0	38,250	12,750	136,000,000	306,000,000	102,000,000
Benoni—											
Modderfontein . . .	5,177	25	6,000	30,000	35 0	10 0	52,500	15,000	155,310,000	271,792,500	77,655,000
Modderfontein Extension—											
Hollfontein	14,135	15	6,000	10,000	45 0	15 0	22,500	7,500	141,350,000	318,037,500	106,012,500
Totals	57,031	...	...	...	...	...	...	...	1,378,625,000	2,871,177,250	975,368,749
Averages	...	29	5,750	24,173	41 7	14 1½	50,344	17,102	...	...	...

portant results would ensue. (a.) The total tonnage and gold value would be largely increased by reason of the addition of quantities of Main Reef ore, the grade of which in the past fell below the pay-limit. (b.) The excess profit attributable to this reduction would be upwards of £350,000,000 on the tonnage given in the table, besides the additional profit from the extra tonnage of Main Reef.

(3) The estimates of grade, dip, gold value, and profit value relate to the sections for which they are given, and not to any particular mine in any one section. Investors will find further particulars of individual mines in Appendix A.

(4) On some of the sections, the Vogelstruis—Main Reef for instance, the grades of ore are estimated at rather higher values than were shown in past working. The modern method of sorting the ore had not come into practice when these low grade mines were first worked. It will be noticed that in such cases the estimate of tonnage per claim is put low. This is to allow for extensive sorting, which would give a higher grade for the mill. Some mines now sort¹ out as much as 40 per cent. (see footnote regarding Randfontein in Appendix B.).

(5) This estimate does not take into account any possible discoveries of extensions of the Rand, eastwards or westwards, but refers only to the area from Randfontein to Holfontein.

¹ Considerable misconception exists among those unacquainted with Rand mining as to the meaning of the word "sorting." It has nothing to do with taking out the richest portions of a mine or gutting it. The gold-carrying portion of the Witwatersrand Conglomerate is the cementing portion between the pebbles. In some cases the pebble beds are divided by bands of sandstone. At certain mines the Main Reef Leader, and in nearly all the South Reef, is of a lesser width than that at which the stopes or working places have to be excavated (the minimum working width is 2½ feet to 3½ feet). It will thus be seen that quantities of sandstone are of necessity brought to the surface with the actual reef. Formerly sandstone ("waste") and gold-bearing conglomerate were put through the mill together. About six or seven years ago certain managers hit upon the plan of discarding this waste rock previous to milling the ore. The rock as hauled is deposited upon belts or circular rotating tables, and Kaffirs pick out the waste pieces. [See Illustration.] By means of sorting the grade of recovery is improved considerably, and batteries are kept going on gold-bearing rock intermixed with as little waste as possible. In August 1898, about 86 per cent. of the rock crushed had been sorted previously to being sent to the mills. Some of the companies, *e.g.* Ferreira, Jumpers, Consolidated Main Reef, throw out over 40 per cent. of waste. The average is about 20 per cent. It may be calculated that sorting saves about £50,000 a month to the mines of the Rand.

NEARLY 2900 MILLIONS.

The enormous total of 2871 millions sterling, which is the estimate arrived at of the gold available for practical mining on the area between Randfontein on the west, and Holfontein on the east, is far in excess of any estimates of the Rand's resources which have hitherto been published. In 1893, Mr. Hamilton Smith, estimating only on a depth of 5200 feet on the dip of the reef and a thickness of 5 feet, brought out the gold value of eleven miles of the Central Rand at 325 millions. In 1894, Mr. Theodore Reunert made an estimate of 450 millions. In 1895, Messrs. Hatch and Chalmers brought out the yield of the reefs then being worked at 700 millions, and since then no authority has given an up-to-date estimate. When the enormous area beyond Boksburg which has been proved since 1895 is considered, and also the newly discovered reefs on Randfontein, which will double or treble the producing powers of that section, and when the continued success of the deep and deep-deep levels during the past five years are all considered, the present estimate is not out of proportion to those already published.

The estimates are based on working depths of from 3000 feet on the poorer sections to 7000 on the richest section of the Rand. The average of the dips calculated is about 29 degrees. On these bases the estimated number of tons of payable ore available is 1378 millions. This is calculated to be obtainable from 57,031¹ claims, bringing out the average ore contents approximately at 24,173 tons per claim, or considerably under the average proved by actual working on the Rand. This average is equivalent to a reef thickness of about 4 feet throughout the Rand. The estimated tonnage per claim varies from 10,000 tons in the extreme eastern section to 45,000 tons on the Langlaagte Estate—Crown Reef² Section.

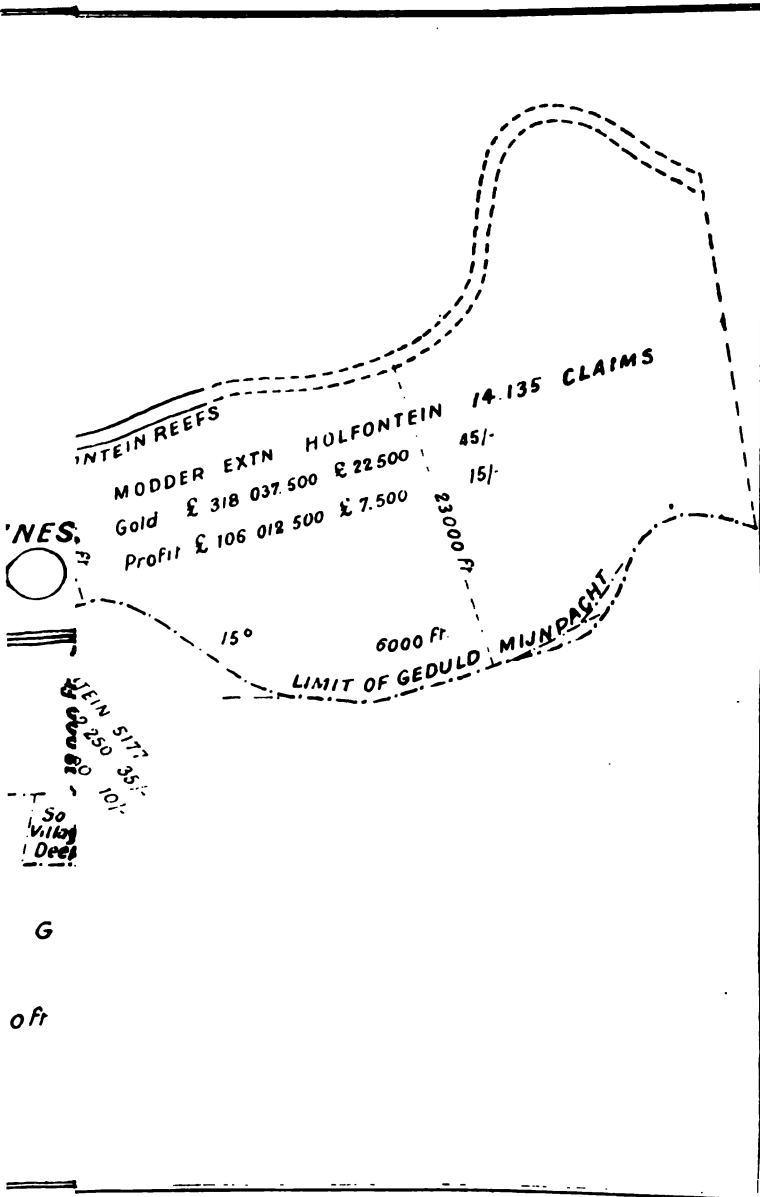
¹ A Transvaal mining claim is 155 × 413 English feet.

² The following is a note of the record of the Crown Reef, one of the premier Rand mines :—

“Since the commencement of crushing in April 1888 to March 1899—eleven years—the Company's receipts have been :—

H-P

(



THE WITWATERSRAND GOLDFIELD 21

Mr. Truscott¹ has stated that from careful computation he found

"That the average total stoping width of banket being worked on the Langlaagte Estate, Crown Reef, Ferreira, Henry Nourse, Jumpers, Geldenhuis Estate, New Primrose, and May Consolidated Mines was about 94 inches, and that over this width the average assay value was 12.75 dwts.; and secondly, that in the following deep-levels along this stretch the Langlaagte Deep, Crown Deep, Robinson Deep, Nourse Deep, Jumpers Deep, Geldenhuis Deep, Rose Deep, and Glen Deep, these average figures would be respectively 84 inches and 13 dwts.

"With the single exception of the Robinson Deep, these mines just mentioned belong to the first row of deep levels, so that as a whole they may be considered representative of that group."

These averages obtained by Mr. Truscott indicate an average tonnage per claim on the outcrop mines of over 50,000 tons and an average ore value of about 45s. per ton, and on the deep-level mines an average tonnage per claim of 43,000 tons and an average ore value about the same as that of the outcrop mines.

The total estimate of 2871 millions shows an average gold value of 41s. 7d. per ton and £50,344 per claim. The average value per ton crushed in 1898 was, according to the State Mining Engineer's report, 41s. 5d. The estimated value per ton varies from 27s. 6d. in the Western Langlaagte to 60s. on the Bonanza—City and Suburban section, and the estimated gold value per claim varies from £22,500 on the extreme Eastern Rand, where only thin bodies of reef are reckoned on, to £112,500 on the rich Bonanza—City and

Working capital	£14,000	
Sale of reserve shares	148,187	
		£162,187
Gold account, 937,709 oz.		3,231,604
Gold account concentrates sold		38,664
Sundry revenue		6,798
		£3,439,253

After spending £2,020,829 on mining, transport, milling, cyanide and slimes treatment, general charges, mine development and depreciation, £185,048 for surface equipment and improvements, the Company was able to pay out over a million in dividends (£1,049,900), and to place £76,593 to reserve. The total working capital provided was £209,309. Dividends paid aggregate 889 per cent., representing 177s. 9d. per share. Upon the basis of 40,000 tons of ore per claim, the value of gold per claim figures at £86,000, of which about £33,000 would represent profit."

¹ Truscott, "Witwatersrand Goldfields," p. 459.

Suburban section. The estimate of profits comes out at 975 millions, showing an average of 14s. 1d. per ton, or slightly above the average experienced on the Rand for the year 1898. The profits estimated vary from 3s. 4d. per ton on the Western Langlaagte to 32s. 6d. on the Bonanza—City and Suburban sections. The estimated average profit per claim is £17,102, varying from £5000 in the Western Langlaagte section to £60,937 in the Bonanza—City and Suburban section. The Bonanza Mine itself has shown in past working a profit value of £175,000 per claim and a gold production of £250,000 per claim.

A statement was compiled and published on the 30th September 1897 by the *Standard and Diggers' News* (London edition), in which it was shown that by that date twenty-five of the principal mines had crushed 11,950,000 tons of ore from a total of 244 claims exhausted. The yield of ore per claim exhausted had been 49,000 tons. The total dividends paid out had been £7,749,536 and the dividends per claim exhausted, £31,700.

FURTHER EXAMINATION.

The totals are so stupendous that it may be as well to bring some additional evidence.

The number of claims is set down at 57,031. The actual number of claims held on the Rand on December 31, 1898, was, by the State Mining Engineer's report, stated at 80,593, of which 5180 paid diggers' licences, and 75,413 paid prospectors' licences. Many of these are held on deep-level ground far beyond the distance from the outcrop at which practical mining is reckoned on in the estimate; but against these must be set the Mynpacht¹ areas calculated in the estimate as claims, and the unproclaimed areas, such as the Turf Club ground, which come well within the limit and are reckoned in the estimates as claims. Neither of these are included in the State Mining Engineer's report. It is evident, therefore, that the number of 57,031 estimated to offer opportunities for practical mining on the Rand is

¹ Mynpacht = mining lease obtained from Government.

much under the number which popular and speculative opinion entertains on the spot.

If exception is taken to the fact that the deepest actual work on the Rand is as yet only being done on depths of between 3000 and 4000 feet, it can be shown that this is no valid exception. Numerous new companies were formed by the principal financial houses in 1899 on ground situated from 7000 to 14,000 feet and 15,000 feet south of the outcrop. Notably there is the new company called "The Rand Mines Deep, Limited," in which three of the principal financial houses in the Rand—Consolidated Goldfields, Messrs. Eckstein & Co., and Messrs. Neumann & Co.—are largely interested. The length of this property, parallel to the outcrop, is $5\frac{1}{2}$ miles. The distance from the outcrop ranges from about 6000 feet on the northern boundary opposite the Henry Nourse, to 15,000 feet on the southern boundary opposite the New Primrose. Assuming the dip to be 30 degrees, these distances show a range of depth at which the reef is intended to be worked of from 3462 feet vertical on the nearest point on the northern boundary to 8655 feet vertical on the farthest point on the southern boundary. Assuming the dip to be 25 degrees, the range of vertical depth would be for this property from 3265 feet vertical at the point nearest to the outcrop on the northern boundary to 6990 feet vertical at the point farthest from the outcrop on the southern boundary. The capital of the company is £1,000,000, and some of the shares were subscribed for at £2. About three-quarters of the capital is issued, and the market value is now over £4½ a share. Besides; Mynpacht areas have been taken out by the leading houses on the farms—Klipriviersberg, Turffontein, Booysens, Vierfontein, and Mooifontein—along the Southern Rand, all on ground stretching to and beyond the limit of practical depth on which the present calculations are based.¹ Mr. John Hays Hammond, the consulting engineer to the Goldfields and

¹ A company called the South Village Deep, Limited, has been floated with a capital of £750,000 (£256,666 working), to work claims situated at 16,000 feet from the outcrop, that is, 5000 feet beyond the limit line on which the present estimate is based. This flotation must be regarded as somewhat premature; large areas nearer the outcro might more reasonably have received prior attention.

Robinson groups, has stated his opinion that profitable mining on the Rand may be carried to a depth of 8000 feet.¹

In fact, the whole general policy of the leaders of the Rand mining industry serves to show that they at least have no doubt as to the practicability and payability of engaging in mining at or beyond the depth calculated on. Even on the far Eastern Rand, where the reefs are thin, ground 15,000 feet from the outcrop has been floated into a company whose shares command a high price on the market.

The great financial houses of the Rand have depended on careful scientific management, and their enterprises are usually undertaken on the advice of the best mining engineering skill the world can give. Critics of their policy regarding deep-deep levels may in future years meet with a similar experience to that of *The Investor's Review*, which in an article on the Rand Mines, Limited, demolished the deep-level ventures of that company entirely to the editor's satisfaction, and received the following retort from the chairman of the company:—

"I think that the best answer would be to attach this article as an appendix to our report, but it will suffice if I refer to two points which show the extraordinary logic and the amazing ignorance of the writer—exceptional even in a professional critic. Because we have framed conservative estimates, because we have fulfilled our promises, says this sagacious writer, there is something mysteriously wrong: we must be picking the eyes out of our mines. That in No. 1 and No. 2 is equally worth preserving. Because we are 'sorting our ore,' because we are 'working close and clean' and are thus 'grading up' our ore by exercising every possible care to exclude waste rock: therefore we are robbing the mine and picking its eyes out. It appears that it is a crime to fulfil your promises,

¹ Mr. C. B. Going states in an article in *The Engineering Magazine*, January 1900: "So far no difficulty has been experienced, either from high temperature or from influx of water, in sinking to depths of 3700 feet, and Mr. Hammond is still of the opinion that it is possible to work to depths of upwards of 8000 feet in the Witwatersrand district."

In an interview at Johannesburg, reported in the *Standard and Diggers' News* (London edition), Mr. Hays Hammond expressed the opinion that there was no indication of impoverishment of reefs as the depth of working increases. Geological considerations lead to the belief that adequate reef values extend as far as mining is mechanically feasible. "I do not approve," he says, "of starting very deep shafts till the intermediate ground between the outcrop and the deep level has been proved. Theory may go wrong, and it is a good conservative policy in mining to feel one's way by degrees. It is my opinion that mining will be mechanically possible at a depth of, say, 8000 feet, or even 9000 feet; this being the aggregate depth of vertical and inclined shafts."

and a deception on your fellows to put up extensive and complicated machinery to enable you to reject worthless rock : you ought to mill it and bring down your yield."

The report in question intimated to the shareholders that they had made profits of £1,694,632 during the year on an issued capital of £448,989.

Evidence of a different nature than that of financial operations which might be looked upon as not necessarily conclusive is also available. Specifications were being inquired for regarding hauling machinery for lifting ore from a depth of 7000 feet. The Tamarack and the Calumet and Hecla Copper Mines on Lake Superior have now reached a depth of nearly 6000 feet, and the problem of raising ore from that great depth has presented no insuperable difficulties. On the Rand, which has a higher elevation above the sea than the shore of Lake Superior, the difficulties should be much less than there, and the limits of profitable work will be determined by payability and practicability rather than by limitations from increased temperature.

Mr. John Hays Hammond has estimated that the extra capitalisation per claim for a mine on the second row of deep-levels working 250 claims, with two shafts, and with the reef 2500 feet deep, would be £800 per claim. It has also been pointed out that with the extra speed and cheaper cost of shaft-sinking attained of late years, the third row of deep-levels may be opened at very little extra cost to that experienced for the second row.¹

The costs of shaft-sinking, mine development, and surface equipment, of subsidiary companies of the Rand Mines group have been :—

Ferreira Deep	100 stamps	.	.	£400,000
Glen Deep	" "	.	.	445,000
Durban Deep	60 "	.	.	460,000
Geldenhuis Deep,	200 "	.	.	475,000
Rose Deep	" "	.	.	644,000
Nourse Deep	100 "	.	.	613,000
Jumpers Deep	" "	.	.	631,000
Crown Deep	180-200 "	.	.	784,000

The richest mine of the group, the Ferreira Deep, which

¹ Truscott, "Witwatersrand Goldfields," pp. 464, 465.

reached the producing stage in May 1899, holds the record for shaft-sinking, for rapid underground development, and for producing gold at less expenditure, and in less time, than any other deep-level on the Rand.

The late Major Seymour,¹ in his evidence before the Industrial Commission, stated that the estimated costs for the equipment and development on an average deep-level mine having 100 stamps would be :—

Construction	£231,000
Development	197,000
Total	£428,000
= £4280 per stamp.	

and for 200 stamps—

Construction	£315,000
Development	236,000
Total	£551,000
= £2755 per stamp.	

These figures do not include the price of the ground.

Deep-Deep Levels.

In 1899 Mr. John Yates read a paper before the South African Association of Engineers, Johannesburg, in which he demonstrated the possibility of bringing ore from a depth of 12,000 feet. Mr. Yates' paper is well worthy of study, although the opinion may be ventured that it will be unnecessary to go to the extreme depths referred to in the paper on account of the probability of the main reef series becoming flat, or even inclining upwards again at a moderate distance from the outcrop.

The following is an extract from an account of Mr. Yates' paper in the *Standard and Diggers' News*, London edition of August 25, 1899 :—

“It is calculated that between the Crown Reef and the Angelo inclusive (about nine miles) there is approximately 46,000 feet of reef—measured parallel to the outcrop—lying south of properties which

¹ Truscott, *op. cit.*, p. 458.



PHOTO BY JAMES BIRD, JOHANNESBURG

CIRCULAR SORTING TABLE, ANGELO DRIEFontein MINES

Picking out waste rock from the Banket

are recovering 40s. or more per ton. Now this 46,000 feet multiplied by 12,000 feet (the horizontal distance between a point in the reef 5000 feet deep and a point in it at heat limit—12,000 feet deep—the dip being taken at 30°) equals 552,000,000 square feet, or 9200 claims. This number does not include those claims in which the reef is at a less depth than 5000 feet vertical."

It is assumed that the grade of the ore will be maintained, and then it is stated that—

"The problem of very deep levels resolves itself into the question of shafts, their position, number, and size, and the method of hoisting. The limit of practical working depends on the heat encountered. Assuming the temperature at 1000 feet at 72° F., the maximum air temperature in which men and boys can do a shift's work at 100° F., we find the limit of work by temperature is 12,000 feet vertical. Mr. Yates doubts the possibility of sinking vertical shafts to a depth of even 7000 feet. Third row deeps will probably have vertical shafts of about 5000 feet. Indeed, the Rand Victoria and Victoria East shafts are not expected to strike the reef at a less depth than 4350 to 4500 feet. It is suggested that the fourth deeps be worked through these 5000 feet shafts on the third deep, through the 8000 feet of incline. In this case the reef would leave the property at 9000 feet vertical. From this to the 12,000 feet limit constitutes the fourth row of deeps with 6000 feet of reef on the dip. It would take about the same time to open out a fourth deep on this system, as with an independent vertical shaft, if such were possible, which is open to doubt. The total length of incline working to the heat boundary would be 14,000 feet, which would involve winding in four stages. A shaft 38 feet by 7 feet would be sufficient for both ventilation and hauling requirements. With four hoisting compartments and four 10-ton skips, and an average hoisting velocity of 2500 feet per minute, 2800 tons per twelve hours could be hauled—sufficient for 400 stamps, allowing for a sorting of 30 per cent."

In conclusion, the author thinks that—

"There is evidently something to be said in favour of working the enormous intact area of reef lying within the heat and payable limit, through 5000 feet one stage vertical shafts, allowing a minimum of 400 stamps to each shaft, and having the size of the latter and the property commensurate with the stamping basis."

A further corroboration of the estimate may be found in examining the return capital may expect from the poor and even the poorest sections. Taking first the poorest section of the Rand, viz., the Western Langlaagte:—The assumption is for a mine of 400 claims in extent, where the

reef is from 3000 to 4000 feet deep. The purchase price per claim would necessarily require to be low on such ground as this, and it may be set down at £100 per claim.

Four hundred claims at £100	£40,000
Equipment and development on basis of modern heavy stamp battery of 200 stamps	800,000
Total capital	<u>£840,000</u>

The tonnage per claim for the district is estimated at 30,000.

$$30,000 \times 400 = 12,000,000 \text{ tons.}$$

$$12,000,000 \text{ tons at } 3s. \text{ } 4d. \text{ profit} = £2,000,000 \text{ profit.}$$

With a 200 heavy stamp-mill about 350,000 tons would be crushed every year, giving a mining life of thirty-four years.

Capital, £840,000 at 4 per cent. = £33,600 yearly.	
£33,600 × 34 years	£1,142,400
Repayment of capital	<u>840,000</u>
	£1,982,400

amount required to pay 4 per cent. per annum interest and return the original capital. Total profit, £2,000,000, or sufficient to provide the above sum and leave a small balance over. This method of calculation is open to the objection that when once the mine begins to pay dividends repayment of capital begins, so that the return would be really more than 4 per cent., because as the years go on the capital invested becomes reduced with every dividend; but against this must be set the fact that, to begin with, there are three or four years of development during which there are no dividends. The balance is in favour of the present estimate of dividends being below the probable returns by one or two per cent. The argument here, however, is to prove the payability of the areas under consideration, and the severest test possible is applied. Of course the example of a mine in the Western Langlaagte area is the worst that could be chosen in the whole area of the Rand, and it may be much below what the actual results will eventually prove on even the poorest sections. Adequate and quite possible

THE WITWATERSRAND GOLDFIELD 29

reductions of working costs would double both the profit and the output. In any case, the Rand Mines, Limited, and Barnato Consolidated Mines own deep-level ground opposite this area stretching considerably beyond the horizon of 3000 feet vertical depth calculated on, fairly sufficient proof that the directors expect to find it profitable.

An examination, however, of a better, but still comparatively poor section, say the Lancaster-French Rand, on the same basis of 400 claims, and this time with a million capital, to provide for a higher purchase price for the ground, shows a much better result.

Four hundred claims at £500	£200,000
Equipment and development of modern heavy stamp battery of 200 stamps	800,000
	£1,000,000

Estimated tonnage for district, 20,000 tons.

$$20,000 \times 400 = 8,000,000 \text{ tons.}$$

$$8,000,000 \text{ tons at 6s. 8d.} = £2,666,666.$$

Life with 200 stamps crushing 350,000 tons* a year is twenty-three years.

Capital, £1,000,000 at 7 per cent. = £70,000 per annum.	
70,000 × 23	£1,610,000
Repayment of original capital	1,000,000
	£2,610,000

or slightly less than the profit of £2,666,666 shown above. This section can, therefore, on the basis estimated, show a profit of 7 per cent. besides return of original capital.

On examination of another typical section, viz., Roodepoort, results are obtained as follows. Assuming the purchase price per claim to be £1000—

Four hundred claims at £1000	£400,000
Equipment and development on basis of modern stamp battery of 200 stamps	800,000
	£1,200,000

$$20,000 \times 400 = 8,000,000 \text{ tons.}$$

$$8,000,000, \text{ at } 13\text{s. } 4\text{d. profit} = £5,333,333.$$

$$\text{Capital, } £1,200,000 \text{ at } 15 \text{ per cent.} = £180,000.$$

Life of mine, similar to last example, twenty-three years.

180,000 × 23	£4,140,000
Repayment of original capital	1,200,000
	£5,340,000

or very nearly equal to the profit shown above. This section can therefore be mined on the basis estimated and show a profit of 15 per cent. besides return of the original capital.

For the sake of comparison an examination may be made of the results to be expected on an ultra deep-level of the rich Bonanza—City and Suburban section. To begin, such a company would nominally have to pay a much higher purchase price for its claims. This may be put down at about £5000 per claim.

400 × 5,000	£2,000,000
Equipment and development on basis of modern heavy stamp battery of 300 stamps and for a depth of from 4000 to 7000 feet	1,400,000
	£3,400,000

Four hundred claims at 37,500 tons, the estimate for the section = 15,000,000 tons.

15,000,000 tons at 32s. 6d. estimated profit £24,375,000.

300 stamps will crush 525,000 tons a year, giving a life of thirty years.

Capital, £3,400,000 at 20 per cent. = £680,000 per annum.

£680,000 × 30 years	£20,400,000
Repayment of capital	3,400,000
	£23,800,000

Profit, £24,575,000.

This mine can, therefore, start with the enormous capital of £3,400,000, and pay dividends of slightly more than 20 per cent. for thirty years and repay the original capital. If the calculations were made on a smaller purchase price for the property, which would be quite a fair thing to do, seeing that the ground in many cases cost little or nothing, and seeing that the working capital will be provided by the owners them-

selves in the first instance, although afterwards the shares may be put on the market on the basis of a price per claim of from £5000 to £25,000.

If such a company were formed now, the £1 shares would be put on the market at from £3 to £4 per share; that is to say, the price per share would be raised until the yearly return would be in the region of 7 to 8 per cent. The fortunate promoters of such a company, besides the considerable sum they would originally get for their claims, could, if they liked, sell out three-fourths of the remaining shares to the public at 300 to 400 per cent. premium, and thus, without waiting for the actual dividends from working the mine, they could make three or four millions immediately. It is in this way that the great corporations like the Consolidated Goldfields and Rand Mines have amassed enormous profits in the past.

Comparison with Producing Deep Levels.

A further test of the conservative character of the estimate is obtainable by examining into the market price of the shares of a typical company like the Ferreira Deep. An examination of this will go to show that the estimate as applied to this mine does not come up to popular expectation. The actual results for three months' work on the mine only showed a profit of 31s. per ton. Applying, however, the larger estimated profit of 32s. 6d. per ton for the section in which the mine is situated—the Bonanza—City and Suburban—the following result will be obtained (the area is 141 claims):—

141 claims at £61,000 = £8,601,000.

The estimated life of the mine is sixteen years.

The capital is £910,000, and the average market price about £7.

910,000 at £7 = £6,370,000.

£6,370,000 at 3 per cent. = £191,100.

191,000 × 16 years	.	.	.	.	£3,057,600
Repayment of capital.	.	.	.	.	6,370,000
					£9,427,600

So that on a basis of the estimate for the district, and at the price of £7 per share, the Ferreira Deep will barely earn sufficient profit to pay 3 per cent. per annum and return the capital. It must be remembered that the Ferreira Deep only worked three months prior to the war, and that although the results were then below the average estimated for the whole Bonanza—City and Suburban section, still, in the course of a year's work the mine is pretty certain to do better, and it will probably show profits eventually considerably in excess of the estimated average of 32s. 6d. per ton, and if the low-grade Main Reef ore is added, the tonnage will greatly exceed 37,500 tons. Further, in the case of a buyer of Ferreira Deep shares at £7, when the mine is working, repayment of capital begins with the first dividend received. This factor will over sixteen years add about 2 per cent. to the dividend rate, which would, therefore, be 5 per cent. instead of 3.

The examination of this property, however, confirms two things—first, that the public, in buying Ferreira Deep shares at £7, takes a more sanguine view of the value of Rand mines than is taken in the present estimate; and secondly, that at £7 Ferreira Deep shares may be considered about high enough under present conditions.¹ A consideration of other working mines along the Rand will lead to similar conclusions.

The Geldenhuis Deep, another typical mine on the Meyer and Charlton—Witwatersrand section of the Rand, may be examined with the following results :—

Claim area, 212 claims.	
Estimated average ore contents for district, 40,000 tons.	
$212 \times 40,000 = 8,480,000$ tons.	
8,480,000 tons at 14s., the estimated average	
profit for district	£5,936,000

Capital as follows :—

Debentures	£160,000
Shares, 300,000, at average market price, £7	2,100,000
	£2,260,000

Mr. Carl Hanan, Chairman of The Barnato Consolidated Mines, has estimated the value of Ferreira Deep shares at £11, and the annual dividend at 66 per cent.

Estimated life, twenty-two years.

2,100,000 at 8 per cent. = £168,000.			
168,000 × 22 years	.	.	£3,696,000
Add repayment of capital	.	.	2,260,000
			£5,956,000

or about equal to the estimated profit of £5,936,000. It is evident, therefore, that in this case also the public take a sanguine view, and unless they hope for a greater return of profit from the mine than the estimate calculated on here, they will be content with 8 per cent. dividends and their money returned. As a fact, however, the profits for 1898 and 1899 on this mine average about 20s. per ton, although the ore mined is only about 41s. in value. This tends to show that the estimated average profit of 14s. per ton for the district is likely to be largely exceeded in actual results.

The same remark about immediate part return of capital, and consequent increase of actual dividends, applies, of course, here as well as to the Ferreira Deep, also the remark about low-grade ores. The mine is worked at a very low cost per ton, and the fact may be used to lead up to the next corroboration of the general correctness, or even conservative character of this estimate of the Rand's profit value. In fact, all the deductions tend to show that the estimate will fall considerably short of actual results.

In all the foregoing examples the calculations are made on the old basis of working costs.

Reduction of Working Costs.

The factor now to be brought into consideration is the reduction of working costs. Dr. Hatch, in his paper read before the Geological Society in 1898, says: "With regard to gold contents, the best section of payable ore extends for about ten miles in the central part of the Rand (near Johannesburg). Outside this section occasional patches of payable or even rich ore are found, but the general average is low grade, and there are many places where the auriferous contents are not sufficient to repay working." But in the

light of recent developments and in the face of the data detailed in Appendix A., he will probably come to the conclusion that very few and comparatively insignificant areas on the Rand can be classed as unpayable. The average cost per ton, as indicated by the figures in the estimate, is 27s. 6d. On one mine on the Rand, viz., the Block B. Langlaagte, a profit has been made on ore of the value of only 23s. 6d. per ton. The basis of 27s. 6d. per ton for the average cost demands that, generally speaking, ore of less value than 7 dwts. cannot be worked at a profit. With the new Government, important changes may be made regarding labour, dynamite,¹ and other items of cost, and it is an open secret among mining men generally that the cost per ton is expected to be brought down to something between 16s. and 20s. per ton. The policy necessary to attain these reductions is explained later. If this is brought about, not only may 2871 millions—the present estimate of the value of the ore contents of the Rand—be accepted, but a much larger figure is highly probable, because then the total tonnage would be swelled by the addition of the enormous quantities of Main Reef, of a value of 6 to 8 dwts., which at present lie untouched in many mines now only working the richer South Reef and Main Reef leader. Critics who may feel inclined to question the results here foreshadowed may do well to take this factor into consideration.

Rate of Production.

There is still another means of checking the result, and that is a consideration of the rate of production preceding the outbreak of the War. The official returns for the nine working months of 1899 showed a production at the rate of about £20,000,000 a year, equivalent to £2,000,000,000 in a hundred years. The rate of production will probably double itself within fifteen years after the War; if so, in fifty years' time the product from the Rand will have reached over £2,000,000,000, and, if such an accelerated rate of progress is made, the whole of the vast amount now estimated may be dug out of the Rand within sixty or

¹ The cost of dynamite has already been reduced.

seventy years. It greatly depends on the labour supplies, and on the capital invested. Regarding the former, there may be some difficulty, but about the latter there need be no fear, because not only have the great houses of the Rand enormous reserves of their own, but under new and enlightened government such a goldfield is sure to attract plentiful supplies of fresh capital.

Nor need it be considered such an extraordinary thing to mine and treat the tonnage of ore presumed. As has already been remarked, these conglomerate reefs of the Rand are similar, so far as regularity and other mining considerations are concerned, to coal beds. The output of coal from Great Britain is over 200,000,000 tons per annum, and if a similar rate of production could be obtained on the Rand, the 1,378,000,000 tons estimated would be worked out in from seven to eight years. Of course this is impossible; but it is possible, and highly probable too, that such an amount will be extracted within the present century. The aggregate of the gold production of the world for the forty-five years between 1850 and 1896 was given by the *Statist* some years back at £1,163,000,000, of which the United States had produced £417,980,000, and Victoria £243,841,000.

In an article published in *The Engineering Magazine*, August 1899, Dr. F. H. Hatch gave the following opinion about the rate of production :—

“On the assumption that the ore will maintain its present grade, namely, between 9 and 10 dwts. of fine gold, or say 40s. to the ton, the output from the Witwatersrand fields would, on this basis” (that is of 12,000 stamps), “amount to 36 million pounds sterling per annum.”

In Appendix D will be found an article by Mr. A. Cooper-Key published in the *South African Mining Journal* on September 9, 1899, written on the assumption that there would be no war, in which it is shown that in 1899 there were 6000 stamps at work on the Rand. It was estimated that at the end of 1900 there would be nearly 8000; at the end of 1901 nearly 10,000, and at the end of 1902, 12,000. These estimates are based on the stamping power required by the new deep levels and other mines then being developed,

and are likely to be under rather than over the rate of progress within the first few years after the War.

The stamping power of the Rand at the end of each year was reckoned up as follows :—

1899	.	.	.	.	.	6165 stamps.
1900	.	.	.	.	.	7895 „
1901	.	.	.	.	.	9845 „
1902	.	.	.	.	.	11,785 „

On the basis of 1800 tons per stamp per annum, and taking an average number of stamps instead of the maxima quoted above, the following tonnage would be crushed :—

In 1900	(7000 stamps),	12,600,000 tons.
„ 1901	(9000 „),	16,200,000 „
„ 1902	(10,500 „),	18,900,000 „

The *Mining Journal* takes £2 per ton crushed to be the probable average value, and forecasts the values of the output for the three years as follows :—

In 1900	.	.	.	.	.	£25,200,000
1901	.	.	.	.	.	£32,400,000
1902	.	.	.	.	.	£37,800,000

The ratios of increase in the value of gold production were 34.6 per cent. in 1897 compared with 1896, and 43.07 per cent. in 1898 over 1897. The estimates of ratios of increase for the four years 1899–1902 are 30 per cent., 26 per cent., 27.8 per cent., and 16.6 per cent. At the annual meeting of the Rand Mines, Ltd., held in Johannesburg on March 23, 1899, Mr. Eckstein stated that the Rand Mines group and its associates were running 3500 stamps, and in five years they would be running 12,000.¹

Conclusion.

Having gone carefully through the estimate of the value of the Rand on the basis of the data supplied in the Appendix A., and having shown that the figures are supported in many ways and by many tests, and that it will be found hard to come to any other conclusion than that the result is likely to fall short, if anything, of the actual future pro-

¹ *Standard and Diggers' News* (London edition), vol. vii., p. 475.



INTERIOR OF BATTERY SHOWING STAMPS AND AMALGAMATING PLATES,
ANGELO DRIEFONTEIN MINES

duction ; still, on the principle that it is desirable to be well on the safe side, let it be assumed, either that a large proportion of the area may prove unpayable, or that the tonnage may fall short of the estimate, or that dykes, &c., may be found in the newer areas in much greater frequency than in the older workings, or that any other equally unlikely things may happen, and let the totals be reduced by one-fourth. If the reduction were made only on the area by taking out the poorest portions from the calculation, it would be equivalent to the elimination of all areas calculated to yield less than 41s. per ton in value and 13s. 4d. per ton in profit. This would mean the elimination of the Lancaster—French Rand section, of the Vogelstruis—Main Reef section, of the Western Langlaagte section, and of the Benoni—Modderfontein section ; that is, it would cut out about fourteen miles of the poorer sections of the Rand. If the two least proved sections,—the Boksburg—Apex Mines and the Modderfontein Extension—Holfontein, which includes Geduld,—were taken out, the total gold value would only be reduced by 620 millions. But let it rather be assumed that the reduction is set against any possible unpayable areas or any possible over-estimate that may have been made, and assuming further that the richer areas and portions left in will only yield in actual practice the same average that was arrived at with these poor sections and portions included in the calculation, which is a very large concession, further minimising any danger of an over-estimate, and the following is the result :—

<i>Claims.</i>	<i>Tons.</i>
57,031	1,378,625,000
Less $\frac{1}{4}$ 14,257 $\frac{3}{4}$	344,656,250
42,773 $\frac{1}{4}$	1,033,968,750
<i>Gold value.</i>	<i>Profit value.</i>
£	£
2,871,177,250	975,368,749
Less $\frac{1}{4}$ 717,794,312	243,842,187
£2,153,382,938	£731,526,562

These figures would certainly be largely exceeded if working costs can be reduced 5s. per ton all round, thus allowing the low-grade ores of the Main Reef to be included.

Further, this calculation leaves out altogether possible returns from the Rietfontein Reef on the north, from which fair results may possibly be obtained in places. At least one mine, the Rietfontein A., has shown good results.

Then there is the possibility of the discovery of completely new reefs on the Rand. In 1899 very encouraging results were obtained by prospectors on such a reef lying near the Hospital Hill shales, and it is quite possible that another payable series may be added right along the Rand. It may also be found that portions of the Black Reef or the Elsburg Reefs, as yet unprospected, may be payable.¹ However, leaving all new discoveries out of account, the data obtained from the indisputably payable Main Reef series has indicated quite sufficient gold to go on with; and even if the Transvaal contained no other goldfields, a source of wealth is there proved and ready to pay any reasonable war debt, and to support in peace and plenty a great population of workers. It can offer a reward to capital in the shape of 730 millions or more in prospective profits, and in addition it has a purchasing power of nearly 1400 million pounds' worth of labour, machinery, material, food stuffs, and other goods, and it will pay for all these things in gold. It can help to keep the Old World industries busy for many years, besides providing a market for all the agricultural produce the old population of the Transvaal and a grand army of immigrants may find themselves able to supply. All that is required is an enlightened and equitable Government policy which will so order things that all will benefit—no one at the expense of his neighbour.

¹ Since the above was written there is further evidence that the Elsburg series is well worth the attention of prospectors.

CHAPTER III

"THE GREATER RAND"

HAVING arrived at an approximate value for the Rand as at present worked, an endeavour may be made to get some idea of the probable value of the unproved greater Rand beyond—the Rand eastwards from Holfontein and south-eastwards through Heidelberg and westwards from Randfontein to Klerksdorp—two extensions which may eventually add another hundred miles or more of payable ground to the Rand area. It is known that both contain the Witwatersrand beds, covered for the most part by more recent geological formations, but every now and then showing indications or undoubted outcrops of the great gold-bearing series.

EASTERN EXTENSION.

Taking the eastern portion first, and beginning just beyond Holfontein, a region of considerable speculative value is entered upon. Dr. Hatch, in a paper read before the Geological Society,¹ says, that after disappearing under the dolomite on the farm Klipfontein, about twelve miles north-east of Boksburg, the strata of the lower Cape formation (that is, the formation containing the Witwatersrand conglomerates) have swerved to the south; and he arrives at this conclusion from the fact of their next being found about ten miles north-west of the Nigel. Since Dr. Hatch wrote his paper, the reefs have been definitely located on the farm Holfontein, and it remains to follow up the information as to the strike gained by that discovery. Dr. Hatch further states that the next appearance of the Wit-

¹ "A Geological Survey of the Witwatersrand and other Districts of the Transvaal," by F. H. Hatch, Ph.D. *Quarterly Journal Geo. Soc.*, vol. liv., 1898.

watersrand beds is at the Nigel mine, striking east and west, but dipping north. He further states that from the Nigel mine the beds can be traced to Heidelberg, and, following the trend of the hills of the Zuikerboschrand, they run through the farm Boschhoek, Schickfontein, &c., &c., to Stryfontein and Boschkop on the Vaal River, east of Vereeniging, where they are again covered by the Karoo formation.

"Farther east there are several inlying portions of the Witwatersrand beds, extending as far as Greylingstad, and constituting a synclinal trough, the axis of which runs south-east. The conglomerates are found outcropping on the northern side of the syncline on the farms Rietfontein, Rietbult, Van Kolder's Kop, Witpoort, and Doornhoek; and on the southern side at Roodepoort, Driefontein, Hex River, Barnard's Kop, Roodewal, Rietvlei, Witpoort, Daspoort, Tweefontein, Driefontein, and Malan's Kraal. The central portion of the trough is much disturbed by igneous intrusions of a basic character."

Over the whole of this stretch the localities where mining has been carried on to any extent are first and mainly the Nigel district, and second the Hex River and the Heidelberg-Roodepoort. On the Nigel area a considerable number of companies are at work. The payable reef or conglomerate bed is here thin, but on the Nigel property it is extremely rich. The results arrived at from a consideration of the data supplied from a limited area are that the ore contents per claim are not likely to exceed 5000 tons, and the gold value may be estimated at 50s. and the profit at 10s. On the Heidelberg-Roodepoort section the results in the past have not been satisfactory. The Hex River Company, however, had begun to develop very promising ore on its property when its work was stopped for want of capital. While, therefore, the facts, so far as known, do not offer great hopes of any very striking results along this vast area, still it must be remembered that to a great extent it is unprospected, and further, that over a great portion of it, the Witwatersrand series is covered by more recent formations.

With regard to the Heidelberg district, the State Mining Engineer says :—

"The greatest part of the proclaimed diggings must, in my opinion, still be reckoned as prospecting fields. Nevertheless, from personal inquiry, I have come to the conclusion that wherever the fields shall be properly taken in hand, a bright prospect can be reckoned upon," and "in any case up till now no substantial work has been done, and it appears that work has hitherto been mostly confined to prospecting operations."

It is not reasonable to think that only the richest portions of the Witwatersrand series have been laid open on the surface, and that the sections which remain covered are all poor. It is probable that many portions of these hidden areas may be found to contain reefs, if not rich, at least payable. And this may especially be hoped for in that region where the reefs are completely hidden, and at the two ends of which, where they are exposed, they are found to be payable. The region in question is that lying between the Nigel on the south and Holfontein on the north. Prospecting on this area presents considerable difficulties on account of the beds searched for being hidden not only under the Karoo formation, but in some parts also under the dolomite. (For the main geological facts about this, and, for that matter, for the whole Witwatersrand auriferous conglomerates, the reader cannot do better than consult the very able and complete description given by Dr. Hatch in the paper quoted.) With greater encouragement given to prospectors on the lines which will be suggested in the chapter on the Gold Law, it may be hoped that another twenty or thirty miles in length of payable ground on the eastern extension may be added to the Rand. The whole length of the outcrops along this eastern stretch, measuring round the turnings of the reef outlines, and taking in also the outcrops of the series running south-east from near Heidelberg to Hex River, round by the Heidelberg—Roodepoort and back towards the Nigel, may be calculated at about 140 miles.

As an example of what may be expected by successful prospecting of these areas, the farm Geduld is notable.

This farm is covered on the surface by the horizontal strata of the coal measures. It belonged to President Kruger, who demanded and received £10,000 for the right to prospect the farm for one year. Little was thought generally at that time of the possibility of the farm containing a payable reef, but the enterprising house which took up the problem put down several boreholes and struck the reef in every instance. To-day, with the Geduld shares at £8½, the property has a market value of three and a half millions.

WESTERN EXTENSION.

A district of even greater possibilities comes next for consideration — that westwards of Randfontein, stretching south-west through Buffelsdoorn to Klerksdorp, a distance of ninety miles. About this district Dr. Hatch says :—

“The conglomerates are clearly exposed on Randfontein, Droogheuvel, Haartebeestfontein, Witfontein, and Elandsfontein. On the latter farm they pass under the dolomite. Like the Hospital Hill series, they emerge again west of Frederikstad, and can be followed past Buffelsdoorn on to Klerksdorp, and thence to the Vaal River.”

In the Klerksdorp district mining has now been carried on for fifteen years, and it must be admitted that the results have not proved satisfactory. The district, however, has laboured under many disadvantages. The beds, so far as proved, are of low grade ; and owing to the want of coal, the greater distance over which material has to be brought, and for many years the lack of railway communication, the working costs have been out of proportion to the value of the ore. The general results show that a considerable amount of gold has been won, and the Klerksdorp end of the section may yet prove a fairly remunerative field for mining when greater facilities are offered and fewer burdens laid on. The State Mining Engineer's report for 1898 states :—

“The past year has been a very difficult one for these fields. Several companies which were producing gold in the beginning of the year, and from which the best results were expected, found it



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necessary, for one reason or another, to close down their works, so that only one company, the Buffelsdoorn Estate and Gold Mining Company, is still at work."

The most hopeful feature for the area, however, has presented itself during the last two years in the remarkable discoveries of the new reefs on Randfontein. These reefs lay untouched, their existence being unknown for fourteen years, although the company owning the ground had unlimited capital, and had done a great amount of work within 300 feet of them. If this can happen on an area like Randfontein, it can be imagined how easy it is to miss the payable beds in a practically unexplored region. The thickness of these beds on Randfontein, and their proved extent along at least six miles of country, argues that they will probably be continuous towards the south-west, lying, under the more recent formations, in the direction indicated by the reappearance of the series near Buffelsdoorn. In any case, this western area presents a magnificent opening for prospectors, and will probably eventually add another fifty miles of payable ground to the Rand area, ground which may quite likely prove equal in value to that between Randfontein through Johannesburg to Holfontein. If this proves to be the case, the estimate of the Rand value in gold and profits would have to be doubled. It is certain that in this great stretch of country there are huge stores of low-grade ore. Mr. J. B. Robinson has recently stated, in the course of his controversy with Sir William Harcourt in the columns of the *Times*, referring to the Transvaal, "The flotation and working of its wealth, the bulk of which lies in what is called lower grade ore, but which possess all the same an enormous amount of gold." Leaving out the possibility of a rich area being found to exist in the district under consideration, there is no doubt about these low grade areas, and the exploitation will certainly be assured provided the working costs can be reduced by liberal and enlightened measures of Government. The discovery of payable portions likewise depends greatly on the future laws regulating prospecting. Reference to this will be made, as stated before in dealing with the Heidelberg district, in the chapter on the Gold Law.

In the Venterskroon district another appearance of the Witwatersrand conglomerates is found. Here the beds dip southwards towards the granite mass, which is to be seen at Vredefort in the Orange River Colony. Dr. Hatch ascribes this reversed position to faulting. Although some of the reefs show high assay values at places, work has neither been extensive nor highly remunerative in the past. This district, like many others, has suffered from attention being concentrated on the Rand near Johannesburg. When reduced working costs make it possible, the district may be expected to produce a large quantity of low-grade but payable ore.

CHAPTER IV

QUARTZ REEF DISTRICTS

OTHER districts in which the mines are for the most part on quartz reefs will now be dealt with.

LYDENBURG.

The district which produces the most gold from these sources at present is that of Lydenburg, and the bulk of the gold won there is derived from the operations of the great gold mining company known as the "Transvaal Gold Mining Estates," at Pilgrim's Rest. The goldfield is one of the oldest in the Transvaal, and formerly it supported a large population of diggers, who successfully worked the alluvial deposits. These were found especially rich in the gravels along the Pilgrim's Creek and the Blyde River, and it is estimated that nearly three-quarters of a million pounds worth of gold was obtained by these diggers. After a time, however, the Transvaal Government granted a concession over the area to a speculator named Benjamin,¹ and the remaining diggers were bought out, and individual alluvial digging became practically a thing of the past. Subsequently, various companies were formed, and eventually a great amalgamation took place on the formation of the present Transvaal Gold Mining Estates. The operations of the company are mostly confined to working the gold-bearing reefs. The gold occurs in sugary-quartz layers interbedded in the strata of the upper Cape formation. These quartz layers are found either near the base or near the top of the dolomitic limestone, which is a notable feature of the formation. Dr. Molengraaf states² that the position

¹ See Appendix, Gold Concessions.

² Report of State Geologist for 1899.

of these mines with regard to the dolomite agrees with that of similar gold deposits at Kaapsche Hoop in the Barberton district. The strata dip towards the west at a comparatively low angle, and the district has been so eroded that deep valleys have been scooped out, and immense quantities of the rocks carried away. Some of the resultant hills left towering above the valleys have detached areas of the gold-bearing reefs still left, and the outcrops of such areas run round some of the conical hills like a hoop. The Theta is an example of this. Large quantities of highly payable ore have been obtained from this reef. The alluvial gold was, of course, derived from those portions of the reefs which have been eroded and washed away, the gold being left behind. There are numerous places in the district where payable alluvial is likely to exist, but neither the gold laws nor the Government which made them favoured the individual digger, and little work was being done when the War broke out. Other ore deposits are found in the lower strata of the upper Cape formation near Pilgrim's Rest. There is the rich Sherwell reef found on the edge of the Drakensberg, east of the Truer River. A typical mining camp can be seen at this place, in a situation at once healthy and picturesque; from the top of the escarpment of the Drakensberg one can look over the wide valley 3000 feet below, until the vision ends in the blue outlines of the Lebombo range, nearly 100 miles away to the eastwards. All over the district there are thin quartz-stringers of extraordinary richness, which are found in dykes and sheets of decomposed diabase. Typical examples of these can be seen on the properties of the Lisbon-Berlyn and Graskop companies. These deposits, and the others before referred to, are being worked with more or less success around Pilgrim's Rest, and farther south at Spitskop and Mac-Mac.

It is estimated that about £2,000,000 of gold has been obtained from the district since the commencement of mining. The official returns show that in 1896 the value of the ore treated was 45s. 10d. per ton. In 1897 it was 39s. In 1898 it was 43s. 6d., and in that year gold to the value of £404,354 was obtained. The Transvaal Gold Mining

Estates Company is the largest gold producer in the district. Its capital is £640,000, of which 33,755 shares are unissued. For the year ending 31st March 1899, the gold produced was 67,123 ounces, realising £280,685; the net profit of £87,290 enabled a dividend of 10 per cent. to be paid. Working costs range between 17s. 6d. and 18s. 6d., the company taking advantage of the water power in the district to run its mills through the intermediary of electricity. The property covers 300 square miles, and the reef has been traced for a distance of thirty miles. Glynn's Lydenburg, another mine working similar ore to that of the Transvaal Gold Mining Estates, produced, in July 1899, 2169 oz., and in August 1789 oz. This company has entered the lists as a steady dividend payer.

BARBERTON, OR DE KAAP.

Next in importance to the Lydenburg fields, if not really excelling them, is the great gold-bearing area of De Kaap, the district in which the town of Barberton is situated. Alluvial gold was first found here in 1875, but it was not until 1884 that part of the district was declared a goldfield. An enormously rich reef of great thickness was found in 1886, and the famous Sheba mine commenced operations on it. A boom set in, and a large population soon collected; but it was overdone, and when in 1887 the Witwatersrand conglomerates had begun to be definitely proved, many people left Barberton for the new fields. Although the district has continued to produce a comparatively large amount of gold every year, its first glory may be said to have been eclipsed, and its subsequent history over-shadowed by its great rival the Witwatersrand. The reefs in the Barberton district differ from those of both the Lydenburg or Witwatersrand beds in the fact that they occur in a much older formation than either of these, viz., the old Malmesbury slates and schistose rocks, sometimes called the Namaqualand schists, the same formation which lies directly below the conglomerate series of the Witwatersrand.

The reefs are for the most part gold-bearing veins, but

the Sheba reef is a quartzite with a network of thin veins of quartz running through it. The quartz veins are extraordinarily rich in gold. The Sheba mine must rank among the most remarkable gold-mines in the world; some of the stopes show that a thickness of nearly ninety feet of ore has been taken out. The mine is situated high up among the hills which run along the eastern side of De Kaap, and as a consequence can be worked to a certain extent by adits. The accounts of the Sheba Company for 1898 show that, although the tonnage crushed was more than double that for 1897, the profits were only £111,000 against £173,000. There was a considerable fall in the grade of ore treated, but this is explained by the fact that the increased capacity of the mill rendered it possible to exploit and crush the large reserves of low-grade ore exposed in all stopes throughout the mine; while no attempt was made to increase this by extracting the rich ore from the Zwartkopje block. For the period from 1888 to 1898 the mine paid £720,000 in dividends. The yield per ton of ore crushed has fallen from the region of £10 per ton in 1896, to under 40s. per ton in 1899, the richer shoots so far discovered having been nearly exhausted. There is, however, an enormous reserve of low grade ore, and new shoots may be encountered, and with the magnificent equipment which the mine possesses, good profits may be expected even from comparatively poor ore. There are other mines besides the Sheba working on quartz reef near the town of Barberton, some of which make fair profits, but on a smaller scale. Near to Barberton, about thirty miles to the south, are the Steynsdorp or Komati goldfields. There are numerous gold-bearing reefs here, but so far the refractory nature of the ore, together with other hindrances, has prevented profitable exploitation.

In the Barberton district there is another mining centre at Kaapsche Hoop, where in the past a considerable amount of alluvial digging has been carried on, and besides semi-reef deposits have also been worked.

The great difficulty about working the alluvial has been the uncertainty of the water supply, and if a plan could be

found for obtaining sufficient water, an immense quantity of gold could be recovered from the Kaap plateau. A few individual diggers have been working from time to time, and occasionally one or two have met with phenomenal success. Numerous large nuggets have been found. This alluvial gold is undoubtedly the result of concentration in the course of ages from the great deposits of low grade ore which has been washed away in the progress of denudation of the dolomite rocks with their accompanying gold-bearing layers. The alluvial gold is found mostly along well-defined lines.

The reef or semi-reef deposits which are worked occupy the same geological position, as has already been mentioned, to that of the gold-mines at Pilgrim's Rest. Dr. Molengraaf,¹ the State geologist, thus describes the ore and the method of working :—

“At Barretts-Berlin, a dark brown tufaceous earth rich in iron, decomposed pyrites, and manganese, is mined in big open quarries and treated for gold. After being ground in an ordinary mortar mill, such as is used in the Netherlands in trassmills, the gold is recovered from the entire stuff at once by the cyanide process. Irregular stringers of quartz intersect the deposit in various directions, while the true nature of the formation is indicated only in a few places by huge blocks of dolomite.

“It is evident that we have to deal with the decomposed and disintegrated lower beds of the dolomite formation, which, however, also appear to have been somewhat differently developed previous to their being exposed to the weathering forces. Possibly diabase and diabase tuff have played a greater part here than elsewhere in this formation.”

The Barretts-Berlin Company is making good profits from treating this brown tufaceous earth in the manner described, although it only contains between 4 and 5 dwts. per ton. This Company is also interesting as showing the cheapest working costs of any mine in the Transvaal. During the year ended February 1899, the working cost amounted to 11s. 5½d. per ton, and the profit on operations was 6s. 3½d. per ton. During the past five years the total cost of mining and treatment has fallen from 17s. to a minimum of 11s. 4½d. The dividend earned was at the rate of 7½ per cent.

On the same plateau, at Kaapsche Hoop, lying farther

¹ Report for 1898.

down in the upper Cape formation, there are layers of gold-bearing conglomerates which are equivalent to the conglomerate of the Black reef series of the Rand. Patches of this conglomerate are known to be extremely rich, but comparatively little work has been done.

Besides the alluvial found on the top of the plateau it has recently been discovered that there are valuable deposits at the foot of the gorges and along the streams which flow down the Kaap valley. The Kaap plateau, it must be understood, rises in the form of an abrupt krantz or mountain on the western side of the wide De Kaap valley, about twenty-five miles from the town of Barberton. Standing on the edge of the plateau one gets a magnificent panoramic view of the valley 3000 feet below. Down there, as has just been stated, there is gold, and in payable quantities, but it can be obtained only at the risk of fever during part of the year. Above, on the plateau itself, there is a large field for work, and the climate is healthy in the extreme.

The State Mining Engineer reports for 1898 :—

“The past year has left its mark as one of exceptional pressure on financial affairs. The immediate results are a noticeable lessening of the income, which is easily seen by referring to the annexed financial statement.”

“As will be seen, the greatest lessening occurs under the heading of Claim licences and Transfer dues. A number of claims have lapsed, and little business was done. The statement referred to shows that at 31st December 1898 there were 10,743 claims less than on the same day of the year before ; there was in 1898 less transferring of properties, which indicates the dulness of business.”

SWAZILAND.¹

Ten or fifteen years ago Swaziland was looked upon as a coming El Dorado. The quartz specimens and the alluvial nuggets obtained on Forbes Concession and at the Clydesdale near Pigg's Peak were considered to be characteristic of the whole country.

¹ See Memorandum on Swaziland Concessions, by W. P. Fraser, in Appendix F 2.

Whether the bright prospect which the country appeared to show at a time when it was more or less *terra incognita* will be realised is still uncertain. Payable areas are most likely to be found in the concessions running along the northern and western borders between Darkton and the Horo—that is, the highlands adjoining the Transvaal opposite to the Komati goldfields and the Sheba. These gold-bearing areas have yielded at Forbes Reef, Pigg's Peak, and from other mines some hundreds of thousand of ounces, and may be looked upon as the eastern ends of the De Kaap gold belt. Farther eastwards down to the King's Kraal, and away south, a considerable amount of capital has been unavailingly expended in the search of payable reefs. The best that can be said of Swaziland as a factor in the mineral wealth of the country is that it has undoubted possibilities.

A property near Pigg's Peak known as Black Diamond Creek was being worked just prior to hostilities. The ore is a soft schist and is reduced by a ball-mill driven by an oil engine. The ore consists of a talcose schist known by some as the Swaziland schist, and apparently contemporaneous with the Barberton schists. It is soft, and can be broken out with a pick almost anywhere, and carries free gold of very fine grade. It requires no dynamite, and is quarried by open workings, the trucks being run up to the face. It runs in places 6 and 10 dwts., and is expected to average 5 dwts. Working costs are so low that 3 dwts. cover everything. This is an entirely new auriferous formation to most people, but it is a very hopeful discovery, and, while illustrating the possibilities of a new country like Swaziland, shows the advisability of educating public opinion abroad to the dangers of conservatism in the matter of mineralogical prospects. At one time the greatest experts would have sneered at Banket beds ultimately proving to be the richest auriferous strata in the world. To-day there are many who will fling their money away on worthless mines, which have returned nothing after many years' development, &c., rather than exploit a cheaply worked schistose formation such as Swaziland has been proved to possess.

GENERAL REMARKS ON THE BARBERTON DISTRICT.

Quartz mining, unless the local and economic conditions are extremely favourable, is necessarily of a speculative character. Shoots of gold, which are of irregular occurrence in the run of the reef, must be very rich to make up for the very considerable expense in cutting through dead ground, and then again where the reef consists of patchy rocks, where chance alone reveals payable gold, the dividend paying outlook is very problematical. When, therefore, mining costs, as well as the cost of living, are unduly high owing to the impositions of concessions and extraordinary fiscal and railway tariffs, it is obvious that a purely quartz reef district, such as De Kaap, has had a bad chance in the past. Many of the mines were showing up remarkably well when the War broke out. De Kaap propositions should first of all be put to the test of development before they are formed into large companies. Development companies with a total capital of from £20,000 to £50,000, and whose cash working limit is not less than from £10,000 to £30,000, should begin on the surface prospect of the ground and open up the reefs sufficiently both in depth and along the strike to prove their permanently payable nature. When the initial company has proved a success, a large company may be floated, and this company should have at least £75,000 in cash for the purpose of further development and equipment. On the Rand, mining has been reduced to a business science, in which nothing is begrudged in order to make the equipment thoroughly efficient. On De Kaap and other quartz fields the habit has been to under-estimate the cost and over-estimate the milling value of the ore. The secret of quartz reef mining, then, is to (1) carefully choose the ground; (2) exploit it as thoroughly as may be with the working capital set aside from a low capitalised development company; (3) only when the ground shows up well, and extraction costs and assay yields over all are favourable to ask the public for the large sum necessary to place the proposition on a dividend paying basis. Given these precautions, the De Kaap goldfields

should, in a few years, become once more the centre of a large industry. It is the many failures of the past, caused by an utter disregard of the primary requirements of mining in quartz as opposed to the more certain banket beds of the Rand, that has earned for De Kaap a reputation which has retarded the proper development of its undoubted mineral resources. While this applies especially to De Kaap, it is applicable to every quartz reef district in South Africa from the Knysna to the Zambesi, with, perhaps, this difference, that none are more highly mineralised, and few offer more substantial advantages to the discriminating speculator, than the one under review.

In the De Kaap district, including Barberton, there are many reefs which in other countries would be looked upon as inviting mining propositions, but which are here neglected; again, the remark applies that the new Government may find methods to develop the resources of the district by encouraging the reduction of working costs. The total value of the gold production in 1898 was £305,912, the average value per ton 32.32 shillings. From the Swaziland fields gold to the value of £28,395 was obtained in 1898; the average per ton was 18.11 shillings.

THE NORTHERN GOLDFIELDS.

These fields have had a chequered history. On them, the first mine to be worked in the Transvaal, the "Eersteling," was discovered. The reefs are fissure veins of quartz, occurring in the belts of old Namaqualand schists which run in an east and west direction between masses of granite. They belong to the same geological formation as that in which the rich copper ores in Namaqualand are found. At many places very rich lodes have been discovered, but as usual with quartz in South Africa, great differences of value occur within limited distances along the strike of the reefs; possibly for this reason, but also for others, viz., the unhealthy climate of the districts in which the reefs occur, troubles with the natives, the lack of railway communication, and other drawbacks mining has not progressed in a satisfac-

tory manner in the district. The State Mining Engineer in his report remarks as follows :—

ZOUTPANSBERG.

“There is, to say the least, no noticeable improvement or progress of the mining industry of Zoutpansberg.

“I think the Raad ought really to take into consideration any means to advance the exploitation of the gold-bearing ground in unhealthy regions, to grant it out, and thus encourage prospecting on the ground. The rights of the holders in these grants should be properly kept within the limits. Time and experience have shown that it will be of no avail to make the conditions of exploitation the same as on healthy districts. The expenses under the circumstances of the exploitation, coupled with the expenses of forwarding of food stuffs (in spite of the railway) and machinery, &c., are too high, and the fever and general unhealthiness are too discouraging to entice the prospector thereto, and to risk his life and capital.

“There is every reason for the belief in the suitability of this region for the growing of tropical and subtropical plants, though, seeing that the best places are proclaimed, these remain closed for this industry, therefore it is desirable that prospecting be encouraged as much as possible, so as to make it possible to secure a proper and speedy exploitation. If within say two or three years no important discoveries have been made, then the ground proclaimed can be withdrawn, and become disposable for the other industry of the land, viz., agriculture. I confirm the opinion that the Zoutpansberg goldfield is the most extensive in the land.”

The benefits that would have been derived from the Pretoria-Pietersberg Railway had not time to make themselves felt before the outbreak of war, and the notorious Selati Railway had not yet reached the fields, nor was it likely to do so for many years to come. The best account of the economical importance of part of the district is to be found in a paper by Mr. C. Wilson Moore, read before the Geological Society of South Africa.¹ In that paper he describes the Klein Letaba gold zone as “being narrow, and broken into scattered sections.” It may be noted that this field had a brief period of fame in the years 1892 and 1895, principally owing to the phenomenal results obtained for a time on the Birthday Mine. Returns fell away however, and the reef either

¹ “Economic Value of the Murchison Range,” C. Wilson Moore. *Trans. Geo. Soc. South Africa*, vol. i., p. 56.

pinched out or was cut off by a dyke, and has not again been located. The greatest production from this mine was in 1892, when it produced 13,618 oz.

THE MURCHISON GOLD BELT.

In the paper by Mr. Wilson Moore referred to, a detailed description is given of the gold belt of the Murchison range, which runs through the mining districts of Marabastad, Woodbush, Thabine, and Selati. Regarding this auriferous belt, he remarks :—

“Hitherto the auriferous quartz reefs of South Africa have with one or two notable exceptions, to which I need not more particularly refer, failed to extend through any practical number of claims, being more or less lenticular in shape, the workable area being naturally very small. In the case of the Murchison range, the reefs or lodes run for quite the distance I have stated (forty miles), over which length of country they have been actually proved.”

The reefs are highly mineralised quartz veins containing antimony, iron, copper, and gold. One is almost pure stibnite or sulphide of antimony. This reef at the Gravelotte Mine is impregnated with gold. This antimony reef occurs in a northern line of the belt. A southern line, known as the La France President Southern line, is also described in Mr. Moore's paper. The principal reef is stated to be 18 inches in thickness, and is estimated to yield about 12 dwts. to the ton. It is proved, with the exception of one or two gaps, for about fifteen miles. Mr. Wilson Moore estimated that this line of reef, down to a depth of 1000 feet, should yield £25,000,000 value in gold. The northern line he estimated to be capable of producing £20,000,000 of gold besides a large value in antimony if worked down to a similar depth. Mr. Douglas S. S. Stewart, B.Sc., thus sums up the gold-fields of the Murchison in a paper read before the Institution of Mining Engineers :—

“First, There are a number of localities in the Murchison range in which reefs 2 feet to 8 feet wide have been proved to a depth of 100 feet, and containing rich chutes of ore ; in some cases rich in antimony, yielding as much as 10 oz. of gold per ton, and these, in some instances, appear to be of considerable extent, although it is

not principally in such that the economic value of the gold belt depends.

"Second, That there are numerous lodes, some of them containing antimony, which have been traced intermittently from ten to forty miles, and proved in many places to a depth of 100 feet, which yield from 1 to 2 oz. of gold per ton from ore bodies having an average width of about 3 feet.

"Third, That there are numerous lodes, mostly ferruginous, some proved to a depth of 150 feet and others quite undeveloped, containing ore bodies 5 to 8 feet in width, which give uniform yield throughout of 10 dwts. to 1 oz. of gold per ton. All the gold in these reefs being free milling to a depth of about 150 feet, below which auriferous pyrites occur."

The State Mining Engineer reports the following values for the whole of Zoutpansberg goldfields :—For 1896, 27.65 shillings per ton ; for 1897, 51.92 shillings per ton ; and for 1898, 31.44 shillings per ton.

PRETORIA.

Near Pretoria there are some promising quartz reefs, and some work has already been done on their western extension. The late President did not encourage work on these fields, not wishing to have a goldfield and its population so near his throne. There was, however, not much danger of a new Johannesburg arising.

OTHER GOLDFIELDS.

There remain one or two unconsidered trifles in the way of goldfields in the Transvaal. On the border near Mafeking quartz reefs have been prospected and worked intermittently at Malmani. One reef, known as the Mitchell Reef, gave promising prospects, but exploitation is rendered difficult by the great quantities of water encountered ; for some years past little work has been done on the fields. There are also the Vryheid goldfields near Zululand. Here an amount of work has been done on banket beds similar to those on the Witwatersrand, but the company carrying on the work did not meet with success, although the ore is believed to have a value of from 6 to 10 dwts. per ton. Recently dis-

coveries have been made of quartz reefs yielding phenomenally rich assays in the same district near the Pongolo River. Sufficient work has not, however, been done to prove the permanent payability of the reefs.

This description of the goldfields of the Transvaal, which chiefly contain gold-bearing quartz reefs, and the results of work done on them, must bring the reader to the conclusion that they cannot at all be compared with the extraordinary resources of the Witwatersrand deposits. While this conclusion is justifiable, still in any other country than the Transvaal these would be considered fields of great commercial value, and every encouragement would be given to their development. So long, of course, as the Witwatersrand offers such magnificent opportunities for capital and labour, these other fields will be comparatively neglected unless special inducements are offered. To this end some suggestions regarding the gold laws of the country will be made later in this book. If successful mining communities were established here and there over these fields they would be a direct gain to the country in providing local markets for agricultural produce, and centres of commercial and industrial life, where at present only wild and uncultivated country is to be found, and where only ignorance and hatred of everything progressive prevails.

CHAPTER V

THE MONOPOLY IN GOLD

AFTER the conclusion arrived at in the previous chapters, it must at least be admitted that the Transvaal contains an amount of potential wealth in its gold deposits far in excess of what most people believed possible. The total arrived at for the Witwatersrand, after vigorous pruning and a final deduction of 25 per cent. to prevent any possibility of over-estimate, came out at £2,153,382,938. No confident estimate was come to of the value of the greater practically unprospected and unproved Rand, and only a general idea has been put forward of the other goldfields. The total gold-bearing area in the Transvaal is stated by Professor Becker to be 55,000 square miles, and it will not be surprising if within a few years, when not only the deep levels of the present working Rand, but its extensions east and west are further developed and worked, and when the other goldfields which have been briefly described have had more attention paid to them, that it will come to be generally accepted that a production of from 3000 to 4000 millions in pounds sterling may be quite a possible, and even probable, estimate for the Transvaal. But leaving controversial questions as to higher figures of value out of consideration it will be agreed on all hands that the Transvaal contains such vast resources in gold that the laws regulating the exploitation of the mines are of the first and most vital importance.

The present chapter is devoted to an examination of the gold laws of the late Republic, and to the general far-reaching consequences which their past influence has brought about.

Features of the Gold Law.

The fundamental basis of the present law is stated in Art. 1 as follows:—"Art. 1.—The right of mining for and disposing of all precious stones and precious metals belongs to the State." Art. 2 extends the principle to silver and quicksilver and other precious metals, and runs as follows:—"This law is applicable to gold, and, further, to silver and quicksilver, if the latter are found as pure metals, and to such other precious metals as the State President, with the advice and consent of the Executive Council, with reference to this article of this law shall make known."

Having in this clear and unmistakable manner set forth the right of the State to all the gold in the country, the law proceeds to lay down the conditions on which private persons and companies may be allowed to engage in gold-mining for their own benefit, and what consideration the State demands for these privileges. One of the first cares on the part of the late Transvaal Government was to frame conditions so that the burghers of the State, who in the first instance were and are still, in many cases, the owners of the farm on which gold exists, should derive an immediate benefit from their good fortune. And from the beginning the conditions have always carefully secured this favourable treatment of the owners of the ground, but, as will be seen later, the policy to a great extent defeated its own ends.

The present law provides that before a farm can be proclaimed the owner may select a portion of the farm not exceeding one-tenth of the total area, over which he receives from the Government a mynpacht or mining lease. For this he pays annually 10s. per morgen, the Government having the right, however, to take $2\frac{1}{2}$ per cent. of the gold won instead of the rental.

The owner may further secure all the gold covered by his werf¹ or homestead, including gardens and cultivated lands. Over these areas he can obtain a mynpacht or mining lease on the same terms as on an ordinary mynpacht. This werf area was limited to one-thirtieth of the total area of the farm.

¹ Morgen = $2\frac{1}{8}$ acres. Mynpacht = Mining lease. Werf = Homestead. Vergunning = first permission or selection.

In 1898 the Volksraad passed an alteration in the Gold Law, whereby it was provided that werf rights should be obtainable over all cultivated lands on a farm.¹ This did away with the restriction to one-thirtieth of the area. On several farms about to be proclaimed great areas were immediately ploughed, and areas were secured to the owners far in excess of reasonable right, considering even the intention and spirit of the law itself.

The owner has, further, the first choice of pegging a number of owners' claims, and a number of vergunning, or first selection claims,² in all, about ninety claims, and for these he pays the same licence-money as the public, namely, 5s. per claim per month. The vergunning claims are not actually pegged by the owner, but are secured in the following manner:—The owner gives written permission to some one to peg the number allowed by law, according to the size of the farm. The holder of this permission pegs the claims before proclamation, and afterwards he can sell them to the owner or the owner's company or nominee.

After these owner's privileges have been secured the farm may be proclaimed a public diggings, and the public can peg the remaining claims on payment of 5s. per month per claim.

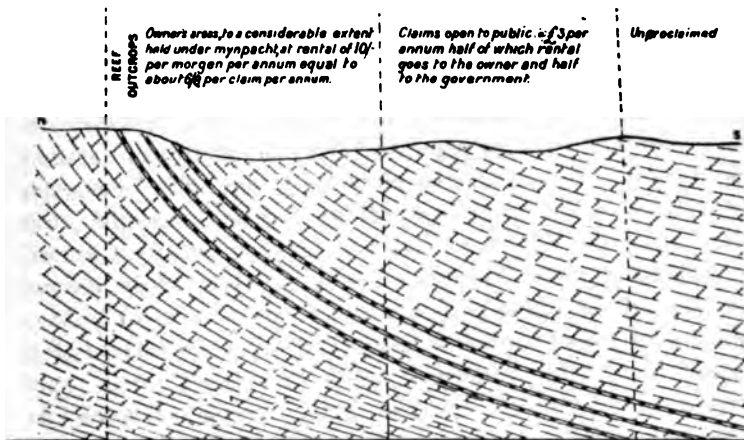
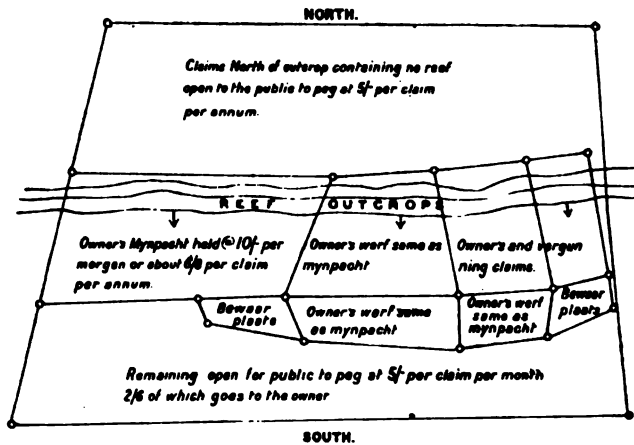
The owner receives from the Government one-half of the revenue from the claim licences collected from his farm. That is, for every 5s. paid per month the owner receives 2s. 6d. On some farms this means a revenue to the owner of £7000 or £8000 per annum, although the farm may never have actually produced any gold.

The owner having first choice can select the best ground, especially that nearest the outcrops (as illustrated by the diagrams annexed).

It will be seen that the owners of the ground have a splendid position. They not only get all the best ground at a low rate, but they derive a perpetual revenue from their more unfortunate rivals, who have to take the less valuable ground.

¹ The official size of a Transvaal farm is 3750 morgen (=7500 acres), but there is considerable variation.

² Claim = 150 × 400 Cape feet, or 155 × 413 English feet. The 150 feet is measured along the "strike," and the 400 feet on the "dip."



TYPICAL GOLD FARM

Showing the portions secured by the owner previous to proclamation.

Mynpacht, or mining lease; *Werf* areas, or homestead and cultivated lands; owner's claims; and *Vergunning*, or first selection claims. Also areas remaining open to the public.

In Plan and Section.

While at first the law was formed to benefit the Boers, as a fact it does so in only a comparatively small degree, because in nearly every case the Boer owner sells his farm before proclamation.

Having attempted to delegate to individuals of their own nationality great part of the benefits to be derived from the right to the gold which they originally assert to belong to the State, and having only succeeded in delegating it to several groups of capitalists, the Government secured for itself, by the law, certain benefits, which however bear an insignificant proportion to those which it had given away. They consist of the mynpacht dues, the Government share of the licences on private ground, and the licences derived from ground belonging to the Government itself. Lately, and only towards the end of its reign, did the Government begin to realise the situation which the gold laws had created, and it was enacted that 5 per cent. should be paid by the mining companies on all dividends earned from the mines. The Government also finally refused to give up to the companies the undermining rights on the bewaarplaatsen. These bewaarplaatsen, literally reserved places, are pieces of ground lying for the most part south of the outcrops of the reefs, which were applied for by the companies for battery sites, houses, depositing places for tailings, water-rights, and other purposes. The title granted conveyed the use of the surface only, and was secured by the payment of a lower rate of licence than that payable on claims. At the time when these surface rights were secured the ground was not known for certain to contain the continuation in depth of the valuable gold-bearing beds, the outcrops of which the mines were working. Later these were found to extend under these places, and even far beyond them, and the leaders of the mining industry asked for undermining rights also. Arguments were laid before the Second Volksraad by the Chamber of Mines as follows :—

“ That the mining companies by opening up the reefs and determining their dip have been the means of proving that the reefs continue under the bewaarplaatsen, and are of value. That this information has been made use of by speculators to endeavour to

forestall the mining companies and claim holders, and deprive them of their equitable right to obtain licences to mine under their bewaarplaatsen.

"That the proposal to sell such undermining rights by auction, and to compel the companies or claim-holders to pay a big price for rights to which they are already equitably entitled, or to suffer the loss of them altogether, is unjust to the companies and claim-holders and opposed to the principle of the Gold Law, under which it is provided that claims shall be given out at a fixed monthly rental. That your memorialists claim, that through their enterprise and the expenditure of large sums of money, they have developed this great mining industry, proved the value of the reefs in depth, and established the prosperity of the Republic on a firm and assured basis, and that, therefore, they are fairly entitled to a liberal interpretation of the law, and to be given a preference as licence-holders of the surface over all speculators who seek to obtain the fruits of the efforts put forth by the mining industry."

To all which it might justly be retorted that the companies had already derived a princely recompense for their efforts in the dividends from the mines that the Government had granted them on most liberal terms.

The matter was debated during several sessions of the Volksraad, and finally, although the Second Volksraad hesitated, the Government refused to comply with the request of the Chamber of Mines, and stood upon the ownership of the State to the gold under the Bewaarplaatsen area, which it had never alienated. What principle chiefly actuated the Government at this time it is difficult to say. In going through the correspondence and the debates in the Volksraad one cannot find any clear principle at all; but what should have actuated them is, that the companies ought to have secured the ground within the time specified by the law, and having failed to do so they lost any claim to the gold rights in question. The value of these Bewaarplaatsen is dealt with in Chapter VII. The gold rights of these areas therefore remained, under the provisions of the Gold Law, the property of the Government.

In a similar manner, the gold rights over all ground which has not been proclaimed, nor in any other manner alienated, equally remains the property of the Government. This is clearly laid down in the following extract¹ from an

¹ Report, Chamber of Mines, for 1899, page 187.

opinion given by Messrs. Solomon & Thomson, Solicitors to the Witwatersrand Gold Mining Co.

JOHANNESBURG, 18th February 1898.

THE SECRETARY,
WITWATERSRAND G. M. CO.,
JOHANNESBURG.

Re Abandoned Claims.

DEAR SIR,—With reference to your query whether claims situated on a private proclaimed farm having been abandoned by reason of the non-payment of licences, and subsequently sold by the Government, you, as owner of the freehold on that farm, are entitled to any portion of the proceeds of the sale, we beg to state that, under the Gold Law, minerals are vested in the State, and all licence moneys which are paid by claim-holders are paid to the Government in respect of their right to such minerals.

The Government, however, pay over to the owners a proportion of such licences, by reason of their being deprived of their right to the surface of the ground of which they are the owners.

When, therefore, any claims are abandoned by reason of non-payment of the licence such claims revert to the Government, who become the owners of those claims, and provision is made how such claims are then to be dealt with by the Government.

(Signed) SOLOMON & THOMSON.

This will be an important factor in considering the future gold laws which may be ordered by the new Government.

It will be seen from the foregoing description that the Government, even under the Gold Law, in no case absolutelyⁿ disposes of its ownership of the gold, but only leases and gives out from time to time the right of working certain defined areas, reserving to itself, in practice, the right to alter the conditions on which these areas may be leased should it think fit.

Effects of the Gold Law.

It now remains to consider what have been the effects of the law during the past fifteen years. The visible general effect has been to throw the greater part of the wealth of the Witwatersrand into the hands of a few powerful financial groups. Before describing in detail how this has happened, let it be clearly understood that there is no intention nor desire to engage in accusations against capital. All men

who think for a moment must see that on such goldfields as the Rand, where the greater amount of the gold is buried - at depths of from 1000 to 7000 feet, it is absolutely necessary that capital should be employed, and, so far from discouraging capitalists, the endeavour of the Government should be to welcome them in every way possible, and by encouraging them with the opportunity of adequate reward, to induce them to open up mines, which, without capital, would necessarily lie useless; but, on the other hand, it is distinctly the intention to point out where the gold laws of the Transvaal, while to a great measure laudably encouraging capitalists, have distinctly discouraged and overburdened individual effort. Even on those fields it would have been possible, while affording capital adequate encouragement, to have made the laws so that the ordinary man would also have had a chance, and so that instead of the wealth being heaped up in the coffers of the few, it would have been more evenly distributed and thus have insured a wider and more general prosperity.

Curle, in his "Gold Mines of the World," p. 220, states regarding Charters Towers Goldfields in Queensland :—

"Charters Towers is a flourishing town. In no town of its size in the whole world, probably, are there so many working-men, miners, foremen, and such like, who are worth at least £1000 each, either in cash or in property, as here. Nearly all the dividends from the mines are distributed locally, and there is always ample capital forthcoming, locally, for any really promising mining venture."

If the Transvaal laws had been different, a like state of affairs might have existed on the Rand.

The Capitalists and the late Government.

In passing, it may be useful to assert authoritatively here that the impression which seems to be prevalent in England and elsewhere, that the Rand capitalists brought about the War, rests more on want of knowledge than on fact. The capitalists, no doubt, tried to squeeze or cajole the Transvaal Government into conceding certain demands affecting mostly their own interests, and on the Education question, the Drink

question, and others, they even, if you will, tried to secure better government. But the final stand for justice, which was made by the people generally, at first obtained little support from them.

At the annual meeting of the Chamber of Mines, held on 12th January 1899, Mr. Rouliot, in his speech from the chair, stated, *inter alia* :—

“What I want to tell our Government is this : We want to help you ; we want to work with you for the good of the country ; but do not render the task impossible by a prejudiced conviction, and by always rejecting our advances with contempt.

“Whilst reviewing the events of the past year, I cannot help referring to the attitude taken up by the local press, and the influence it exercises over the public mind. On one side I personally deprecate this perpetual, ever-ready criticism against any act of Pretoria, even if the facts could be construed so as to justify it. Constant nagging is undignified, and conducive to no good ; it serves only to irritate, without bringing any advantage.”

In fact, it is a matter of common knowledge that the big houses endeavoured in various ways to hold the popular voice in check, and one financial house even dismissed an important member of its staff because he insisted on fulfilling his public duty as President of the South African League. It was only when they perceived that the inevitable crisis was arriving that the majority of the capitalists heartily ranged themselves on the side which demanded the safeguarding of British rights and interests, and just and equal government. The Reform movement was merely a game of bluff, which, had it not been for Dr. Jameson, might have succeeded in its object, namely, the establishment within the Transvaal of a solid Republican Government. Many burghers at that time were dissatisfied with the Government, and would have supported an internal movement for reform. The flag of the Reformers of 1895–96 was that of the South African Republic.

Nor was the attitude of the wealthy interests to be wondered at. German and French capital is largely interested and represented on the Rand, and a war would be likely to cause great immediate loss to all investors in Rand mines. The mines themselves might be destroyed, and twenty millions

of damage might be done to them and their machinery. Some of the financiers were of the same opinion as their friends, the Boers, that the result of the War was not a certainty for Great Britain, and that even if it should finally be won by her, that in any case it would be a struggle, long drawn out. Nor have events proved that they were far wrong. Let people in Britain inquire into this matter, and especially let the leaders of the Liberal party do so, and they will find that they are hitting their own friends, in many cases, when they condemn the War on the ground that it was brought about by capitalists. It was a combination of the Conservative, the Liberal, the Radical, and even the Irish National parties of Johannesburg which demanded justice and fair treatment, as white men, from the Transvaal Government. Nearly all the Britishers stood together, and they were joined eventually by many of the capitalists, most of the Americans, many Colonial, both of Dutch and British descent, and by others of all nationalities.

The parties who were quite satisfied to leave things as they were under the old Government are exactly those on whom the Radicals in England may well expend their invectives. The monopolists, a few of the financiers, the concessionaries on the one hand, and the illicit drink sellers, the illicit gold buyers, and their protectors the corrupt officials on the other hand, were equally loath to see the Transvaal Government in serious danger; and this for the simple reason that they could never hope to obtain another which would so well suit their interests. The same combination—the Liberals, Conservatives, Radicals—which made up the party beseeching fair treatment from the Transvaal Government, now ask for the same from Great Britain.

Before proceeding it must be stated that those capitalists who, although at first against the demand for Justice being pushed to an extremity, but who afterwards threw in their lot with their fellows, have since energetically taken up the Imperial side. They have contributed liberally to the various relief funds. They have equipped and supported several splendid fighting corps, among others the famous Imperial Light Horse. Some of them have not done their

duty merely by proxy, but have gone into the thick of the battle themselves, and fought with bravery and distinction.¹ Further, they have expended immense sums in supporting their employees, by allowing them half-pay during the War. They have not been niggardly in parting with some of their wealth to their fellow-men of the Rand since the pinch became severe. In fact, the great sums which they have provided voluntarily must, in many cases, have proved a serious drain on even their resources, especially seeing that the payments have been spread over a long period, when their mines were producing nothing, except what was taken by the enemy, and when the market value of their properties was continually falling. All these things must be reckoned to the Rand capitalists for good. They have during the War kept thousands from starvation. If they continue to acknowledge the duties of wealth as well as its privileges, they need not fear the attacks of extremists.

Yet, although the part played by many of the capitalists since the crisis has deserved every praise, this does not alter the fact that under the old régime money was the most powerful factor in determining many of the laws, and that naturally the wealthy men made the most of their opportunity.

It can be shown by reference to memorials presented to the Volksraad by the Chamber of Mines that the leaders of the mining community often endeavoured to get the laws passed to their liking and they very often succeeded. How it was done may perhaps be imagined by those acquainted with Johannesburg-Pretoria diplomacy. The alterations of the *werf* right clause in the gold law, whereby instead of $\frac{1}{30}$ th of the farm an unlimited extent was made securable by the owner, has always been a mystery. The Volksleden² in making the alterations must have been fully aware that they were only securing enormous benefits for the very people—the capitalists—they were professing to hold as their enemies. The phraseology of some of the reports of the Chamber of Mines confirms the influence they had over the

¹ Captains George and J. P. Farrar have been mentioned in Lord Roberts' Despatches, and have both been awarded the D.S.O.

² Members of the Volksraad or Parliament.

Volksraad. For instance, on page 94, Chamber of Mines Report, 1895 :—

“At the suggestion of the Chamber, as embodied in the memorial presented to the Volksraad, a number of important amendments were last year inserted in the Gold Law.

“ *Memorial of Chamber of Mines to the Government.*

“That while under Articles 102 and 103 of the Gold Law it is provided that upon the sale of abandoned diggers' claims, which have been specially registered, or for which application for special registration has been made and is being proceeded with, from the proceeds of such sale all moneys due to the Government shall first be paid and the remainder be divided equally between the State and the owner of the farm, under Article 86, upon the sale of abandoned claims whether held under diggers' or prospectors' licences, not specially registered, the whole of the proceeds of such sale go to the State.

“That, therefore, the owners of farms on which the claims have not been specially registered, obtain no compensation for the *loss sustained in licence money* by reason of such claims not being peggable during the three months as provided by law.

“Wherefore, your memorialists pray your honourable House to amend Article 86 of the Gold Law, by adding after the words, ‘sold by public auction,’ in the second paragraph of the said Article, the following words, ‘out of the proceeds the expenses connected with the sale shall first be paid to the State, and of the remainder half shall be paid to the State and the other half to the owner of the farm,’ and to amend Article 102 by expunging the words from ‘Article 86 to registered claims’ inclusive.—And your memorialists will ever pray.”

The request was granted by the Volksraad. No wonder the big houses are quite willing that all arrear licences accrued during the War should be enforced, and that they have only the mildest of objections to make against Lord Roberts' proclamation ordering payment.

“It is proposed to take away from the owner of a farm or portion thereof his present right to obtain a mynpacht for the whole of his homestead ground.

“That your memorialists would respectfully submit that it is not desirable that there should be such a restriction of owners' rights.”

The Chamber's request was granted by the Volksraad. Witness the attitude in this memorial where any restriction of owners' rights is contemplated.

These instances are only a few among the many, and are only quoted to show that far from there having been a continual condition of antagonism between the capitalists and the Volksraad, on many occasions legislation was moulded to their wishes, and the members of both Volksraad and Chamber were individually often on the best of terms. In fairness it must be added that many of the memorials presented to the Volksraad by the Chamber of Mines prayed for reforms and amendments of general usefulness and benefit to the whole community. But it was not always so. There was, for instance, no protest on behalf of peggers and prospectors when the granting of mynpachts was allowed over unlimited werf areas, giving the owners great areas of valuable ground which should rightly have been left for the public to peg. The alteration was noted in the Chamber of Mines' reports in language which conveys an impression of gratified satisfaction. If owners' rights had been trenched upon it would have been another matter. Prospectors and peggers are evidently in the minds of the members of the Chamber of Mines beyond the pale of the "Industry." They are looked upon as only useful for providing them with a convenient revenue in the shape of their moiety of the claims' licences which they are particular to save intact. Witness the memorial to the Volksraad on that question just quoted. It will be gathered that the Chamber of Mines jealously looked after the interests of the houses of which the Chamber is the representative, and that any question was always looked at from the point of view of warding off any encroachment on their privileges.

Before the War all the capitalists kept up a chorus of approval of the Gold Law, and even now Mr. J. B. Robinson is advocating the continuance of its provisions. They know it is a law which gives them much and asks for little in return. Mr. G. Albu has stated that it is the best gold law in the world; quite a natural statement, seeing that he indirectly helped to make it.

The following extract is from a statement issued in 1900 by Mr. Albu's Company (The General Mining and Finance Corporation, Limited) regarding the position of the various

mines and properties under its control. The reference is to the claim licence revenue of the New Steyn Estate Gold Mines, Limited :—

“The claims on Doornkop bring in an average annual revenue from licences of £6000. Although a gold-bearing reef, known as the Steyn Reef, exists, and has been partly developed, *it has been found unpayable* under the working conditions which have hitherto prevailed, *and therefore, in calculating the value of this portion of the property, only the revenue from licences has been taken into account.*

“The licences received from the Doornkop claims *during the past few years* have been as follows :—

1896	.	.	.	.	.	.	£6343
1897	.	.	.	.	.	.	6516
1898	.	.	.	.	.	.	6029
1899, say	.	.	.	.	.	.	5500
Average							£6090

The *capitalised value* of an annual revenue of £6000, on the basis of ten per cent., is £60,000, and the Doornkop estate, for the purpose of calculating its approximate value, may be taken to be worth at least this figure.”

An open confession, surely, of the value of the Gold Law to one of Mr. Albu's Companies. The reef has been found unpayable, and therefore the value of the property consists only in the revenue it provides in licences. The capitalised value of the injustice is even worked out, and shown to amount to £60,000 !

The Government levy of a 5 per cent. tax on dividends in 1898 was considered unfair, and under the circumstances, with some reason. Mr. Rouliot, in his speech delivered January 12, 1899, already quoted, estimated that the 2½ per cent. royalty on gold from mynpachts which the Government had announced its intention of enforcing would amount to about £136,869, the value of such gold having been £5,474,787 in 1898. He further estimated that the new 5 per cent. tax on profits, calculated only on profits from gold obtained from claims, would amount to £148,580, and that the total amount of the two taxes on the basis of 1898 would be about £285,000, contributed by twenty-seven companies, equal to about 1 per cent. on their total issued

capital of £29,100,000. He also showed that the new taxation would mean an additional expense of 9.3d. per ton milled.

After stating that there was no objection to the 2½ per cent. tax on mynpacht gold, Mr. Rouliot proceeded :—

“We lodged our protest against the tax on profits, firstly, on account of the hurried manner in which it had been passed; and, secondly, because we considered the tax unnecessary and unjust. We think it unnecessary, because it seems to us that a country like this, with its population, ought easily to administer its affairs with a Budget of three and a half millions. And we are convinced that with a proper control, avoiding any reckless waste of public funds, the revenue of the State ought to be more than sufficient for all purposes.”

This opinion of Mr. Rouliot on the State's finances is most important at the present juncture. Mr. Rouliot, it must be understood, represents the house of Eckstein. He proceeded as follows :—

“We consider it unjust, because this industry, which already contributes the largest share of State revenue, sees only fresh taxation continually added, in the face of official reports recommending on the contrary many reductions to our burdens. If this new tax had formed part of a scheme for a general readjustment of taxation, then it might have had some justification.”

This speech is quoted not only to show the attitude of the Chamber of Mines, but for the reason that it gives some interesting figures about the amounts the tax was likely to produce.

Having shown then, that on all points the Chamber of Mines memorialised the Government, and that the Gold Law is in a measure the work of the capitalists, and having done so only in order to remove what seems to be a general misconception, the task of describing the effect of its provisions may be gone on with.

Further Effects of the Gold Law.

As has been stated, the law secures to the owner of the farm, that is, *de facto* to the wealthy corporation or firm who buys his rights, certain very important first selections. There

are the mynpachts, the vergunning and owners' claims, the werven or homestead rights, all of which combined are made to embrace anything from a half to two-thirds of the farm.¹ The operation of the clause regarding homesteads as it now stands is especially unfair.

By these provisions the wealthy owners bite off such huge mouthfuls of the cake that it takes even them some considerable time to chew and swallow them, and even longer periods are required for digestion.

They receive most of this ground for a mere trifle of annual rental, 10s. per morgen per annum. It is true that they have to pay what seems a large sum in each case to the owner of the farm for the purchase price of his rights, but let the sum be even £100,000, and a little inquiry will show that it is insignificant in comparison to the advantages obtained. On one farm, for which the financial house which purchased it paid £100,000, the mynpachts were granted immediately before the War, a total area was secured of nearly 2400 claims. This will bring the purchase price per claim out at about £42. Already the market quotation for the shares of the company into which this area was floated stands at a price which brings up the value to £3,500,000, or £1190 per claim, and the transaction shows a profit of 2733 per cent., with a really small amount of development work accomplished. Having made an enormous and an immediate profit by such a flotation, the lucky house settles down to the exploitation of the property. The process will take the form of the formation of a number of subsidiary companies, which one by one will be put on the market at prices of from two to three pounds sterling for a £1 share. In this way the original company secures working capital for each mine into which it subdivides its property, and if it chooses it can also derive a further enormous and immediate profit by the sale of a portion of the vendor's shares in each of these subsidiaries.

The directors of such a company and its able managers, for on the Rand they are all picked men, eminent in their profession, will superintend the equipment of the various mines and start them properly on a profitable career. This

¹ A Transvaal farm is usually about 3750 morgen, equal to 7500 acres.

process on a large piece of ground will occupy several years. Deep shafts have to be sunk, which will take up considerable time. While this is going on there is no necessity for the company gorging itself by buying more of the deeper ground, especially as the Gold Law kindly provides that the rest of the farm, of which it is now the owner, shall bring it in a comfortable yearly revenue. The fact must not be lost sight of that naturally the ground where the reefs are nearest the surface has been secured to the company, leaving only the deeper levels for public pegging. The public promptly and foolishly pegs this deep-level ground and as promptly endeavours to sell it, but it is quickly found that the market is limited. If the claims are offered in Johannesburg there are only six or eight possible buyers, and these have ground enough, which they have obtained by the kindness of the Gold Law at insignificant cost. If a representative is sent to London, Paris, or Berlin to try and effect a sale or raise a company, he will soon find that the only buyers there are the associates and partners of his Johannesburg friends who have already refused his offer. After spending some time and a considerable amount of money he comes back and reports his failure to the syndicate of peggers he represents. These hold a meeting and decide whether to go on paying licences or give up the ground. Eventually, after paying for a number of years, the holders either abandon their property or sell it at a nominal price, frequently making a heavy loss on the whole transaction. All this time the owners have been receiving 2s. 6d. per claim per month in respect of this ground, and having by now digested the areas they in the first instance secured, they send a representative to attend the Government sale if the peggers have by then abandoned their claims, but if they still hang on they will send an agent, who generally succeeds in securing the ground that is wanted for a mere song. Soon afterwards the formation of another great-deep-level company will be heard of and its shares will be put on the market at a price which will bring the value per claim up to £3000 or £4000 for the same ground which a few weeks before went begging at from £50 to £100. This whole process is

known on the Rand by the name of "Freezing out," and the Gold Law is the driving-wheel of the whole machinery. No wonder the wealthy financier calls it a good law. Many holders of rich ground have been ruined by the process.

The following is the comment of a practical prospector of many years' experience in the Rand on reading the above :—

"A law should be introduced which will enable the individual pegger or syndicate desiring to exploit and prove the value of such claims to hold them for a reasonable period at a very low claim licence, which would enable them to expend any money they raise on proving their ground, rather than, in the past, having to provide money merely to pay it over to Government in the form of claim licences. By the old method, it was only a matter of time when nearly all the cash provided for opening up and proving the claims dribbled away on licences to Government and owners' pockets.

"Substantial encouragement should be given the small man who searches the whole country for a decent bit of ground to hold it until he has an opportunity of proving its value, instead of having to chuck it at the capitalists for a mere song."

Leaving the case of the deep-level ground for the moment, and taking consideration now of the case of an outcrop prospect, let it be taken that a man with £500 believes he knows where payable reefs exist, he must, in the case of proclaimed ground, proceed as follows :—First, he must take out say 100 licences costing £25, and peg his ground. It is no use taking out a lesser number, because, if he does, some one else will at once come and peg all the ground round him, and it takes at least 100 claims for an average mine on the Rand, and for prospecting, a much larger area is necessary. Prospecting is a costly undertaking in most cases. It may be that there are surface layers of soft earth to go through, and it is necessary to timber the shaft. After getting down to solid rock the prospector may fail to find the reef, although all the indications are there and the venture may look quite promising, and he goes on, and in, say six months, has spent perhaps £300 without striking the reef. His licence money has cost him £150, and surveying and other charges have taken £25 more, so that only £25 remains. He is reluctant to lose the ground, which, unless he pays up his



WHEEL FOR ELEVATING SANDS AND SLIMES FROM BATTERY TO
CYANIDE WORKS, ANGELO DRIEFONTEIN MINES

licence money, he must do under the law. He then gets some friends to join in, and a syndicate with, say £1000 working capital is formed. This sum is first called upon to pay 4 per cent. to the Government for transfer duty on the shares given as purchase price to the original holder. If the consideration he receives is 2000 shares, this will amount to £80. During the next year another £500 may easily be spent in prospecting without any definite result. In a year the licence money will amount to £300, so that only £120 is left. The syndicate resolves to stop work and to keep what money there is, and subscribe £300 more to preserve the title by paying licences for another twelve months, in the hope that something may be discovered on neighbouring properties meantime. If nothing has been found during that time, perhaps another effort is made by a fresh contribution of capital for another year's licences, and after that is gone the ground is probably abandoned by the disheartened shareholders. Some one else then comes along, and perhaps in a few months it may be finds the reef. Now, let it be seen in the following statement how the effort to find a mine has been taxed.

	Licences, &c.	Cash Capital.
Six months' licences . . .	£150	£500
Two years' „ . . .	600	1000
Charges, survey . . .	25	
Transfer duty . . .	80	300
	£855	£1800

£855 out of £1800, or equal to a tax of more than 40 per cent. on the working capital available. Had all the money been available for prospecting, perhaps the reef might have been found. Half of this tax is given under the Gold Law to the wealthy corporation owning the ground. Contrast this with the Government dues contributed by one claim of say the Bonanza Mine. The Bonanza Company takes out of one claim gold to the value of £250,000. Of this sum £175,000 is profit. It pays for one year's licence on the claim £12—that is all. Since 1898, of course, it will have to pay 5 per cent. of its profits. But this should not be

reckoned in the case here presented, because the new mine, if gold had been found, would have equally had to pay the 5 per cent. on any dividends it might earn. The contrast is therefore as follows:—£12 in licences paid for a claim producing £175,000 in profits, against £8, 10s. paid for a claim, causing its owner a loss of £9, 10s.

Should the prospector try his luck on unproclaimed ground, his lot is even harder. He must first obtain the consent of the owner of the farm, and an option to purchase his rights. If it is a wealthy corporation which makes the contract, this is all right and easy, but if the prospector has only a small capital, in ninety-nine cases out of a hundred he is unable to find the money to carry on both work and pay heavy option money; and even if he does find a payable reef, he must find a capitalist who is willing to buy the farm. He will find this a hard thing in most cases, and even if he succeeds, he is sure to have his share cut down to the vanishing point, so that in this case also the prospector has a very poor chance.

The *Star* newspaper, in an article published in 1899, remarked as follows:—

“Few people will object to the eulogies expressed by Mr. Albu over the Gold Law, but yet even that excellent instrument leaves a good deal to be desired. The initial tax or claim licence of £3 per claim per annum will for ever forbid poor men a chance of profiting by their judgment and foresight.”

The *Star's* opponent, the Government paper named *The Standard and Diggers' News*, also awakened to the real facts of the case, but its voice had lost much of its power by the unreasonable tone of its articles, written in support of the Government, and its continual denunciation of the capitalist, sometimes on unfair grounds.

On July 28, 1898, the Government paper commented thus on the *Star's* remark:—

“Of course we are in absolute agreement with the statement of our contemporary; it is exactly the criticism which we have persistently passed upon the law—it prevents local men from gaining any reasonable kind of advantage from the country's mineral wealth. The prospector, the local claimholder, the local syndicate,

all have to go cap in hand to the great Rand Houses, who very naturally put down the price to a trifling sum or to nothing at all. It has been the ruin of many a man in the Transvaal to own rich gold-bearing property. His substance is spent in maintaining his title; when he is unable to hold out he, perhaps, floats a syndicate to help hold the property. Then this syndicate surrenders at a loss to other hands. They may 'prove' their property, but sooner or later they learn that the possession of a gold property is the root of all ruin. There is no appeal to Cæsar, for if they send to Europe, their prospectuses are referred back to the great houses, and the last end of that man is worse than the first.

"The local capitalist organ (the *Star*) has virtually made this admission. Whether this was done—in momentary forgetfulness of a still more dangerous thing—to find some fault with Mr. Albu's sudden exposure of the whole game, or it was merely a reckless admission made in the belief that a poor man's chance has gone 'for ever,' and that remission of initial charges will benefit the financiers only, we do not pretend to know for certain. It may disarm suspicion to call for a doctor after the death of an enemy. This much, however, is clear. There are still many valuable properties in private hands, and it lies altogether with the Government to consider whether it is wise or profitable to tax these people into surrendering their properties to the very people who have created and sustained this long crusade against the Government, who have reduced the national income, who have almost destroyed the value of town properties, who have ruined hundreds of honest merchants and traders by boycott and misrepresentation. Even 'Houses' must amalgamate or go under in competition like this.

"If the Government can see the way clear to remit all these initial taxes they will do more for the real or permanent good of the country than by any possible measure dealing with the economics of the country. Let all gold-bearing land be proclaimed, let prospectors and men who peg out a reasonable number of claims by their own hands be unhampered in their efforts. The fame of the country will help them to find money, and they themselves will be in no mood for delay. Then, when the gold is won and profits reward skill and toil, let the State make its righteous claim for its share. There will be no failing revenue then. President Kruger has always said that it was his policy to succour and assist the mines of the country. He has been reviled and jeered at for it; and the extraordinary thing is that people should have been found to believe the 'mining magnates,' while such extraordinary results are achieved by the mines. Consider the dividends that will be paid this year by Transvaal gold-mining companies. A better testimony could not be had to the beneficence of the Government towards 'the industry.' For ten years the laws of the State have been made with a view of encouraging mining on a great and prosperous scale, and with the aid of those who have so ably directed the actual work the desired

result is being magnificently attained. A great 'industry' has been built, and its controllers have grown rich, not only on the annual dividends, but on the increase in value of the stocks and claims they have retained or repurchased during recurrent alarms of both the resident and over-sea public. But we ask, *cui bono*, who gets the profits? Is this Government deriving the full service it may reasonably expect from the giant it has nursed and protected; do the people of this country receive any adequate share of the wealth dug up in their midst? No, no, no. The Government has for years received little but abuse from the *protégé* that it has consistently refrained from taxing, for whose benefit it has had to impose heavy burdens on the general community, while the general public have been impoverished by the heart-breaking process of freezing out. The very laws have assisted in this, and our afternoon contemporary, in a moment of apparent forgetfulness, has itself agreed that the gold laws 'for ever forbid poor men a chance of profiting by their judgment and foresight.' A new departure is urgently required. The revenue of the State must be collected from the sources best able to pay, and the finished result must in some way be taxed while taxes on food stuffs bearing on the general community are remitted. The initial claim licences which have ruined many prosperous investors in valuable land must be abolished or remitted until a producing stage is reached; a jealous eye should be kept on all attempts at including in the present semi-monopoly of gold any other of the industries of the land. If this were done, the time might come when the Government would receive the grateful thanks and loyal support of the whole population instead of the solitary voice of one astonishingly outspoken financier."¹

On a later date the same paper had the following :—

"It is the maxim of all modern political economists that the incidence of taxation must be so arranged that while capital is protected and production encouraged, the burden shall be laid on the shoulders best able to bear it. The Gold Law directly transgresses these ideas, and the revenue is collected for the most part from the producer and poorer labourer, while the rich go untaxed. The death duties and income tax of England are examples of the application of scientific taxation, and the experience and practice of old constitutions form valuable precedents for young countries like ours. The great undeveloped resources of this country cannot be worked advantageously to the State until the burdens are taken from the *bona fide* resident population, and by a more even distribution of the wealth that can be extracted from this most favoured land. The mineral laws should allow the prospector to seek fortune without having to sacrifice all he possesses for a chance of success at the hands of the 'Houses.' The apparently trivial but really ruinous tax of 5s. per month per claim should be remitted at once. Its only

¹ Mr. George Albu.

effect is to kill local enterprise, and to place the unlucky possessor of claims at the mercy of the monopolist."

"Revenue can be obtained far better by taxing the wealth that is won, in a fair and equitable manner. The matter is a serious one, and the country is awakening to its gravity. If the Government desires to retain the confidence of the people it must act, and act quickly. There are still fields unexploited. The gold-bearing Rand extends both east and west ; month by month new discoveries are being made, and there is little doubt that mine will join mine from Klerksdorp to Heidelberg. Only the other week it was announced that nine miles of new Main reef would shortly be opened on Leeuwpoort, joining the east Rand to Modderfontein, and in the near future the whole gold-bearing belt will be explored. If the present laws remain, it will all fall under the control of the monopoly improperly known as the 'Industry.' "

And again later, on the approach of war :—

"In the whole industrial history of this Republic there was probably never devised a more mischievous provision of law than that comprised in the additions to Clause 55 of the Gold Law of 1895, and now forming part of Clause No. 50 of Law No. 15 of 1898.

"This new-fangled arrangement provided for the conversion of werven into mynpachten, which is greatly in favour of the capitalist owner of farms, and diametrically opposed to the interests of every individual in the State outside that class. In essence, the clause reads that owners of farms have the right to reserve plots of ground on unworked farms, which shall be reserved for homestead building or arable lands, thus constituting werven.

"This clause has been a very great incentive to agricultural 'development.' That is perhaps the only good it has ever done. The number of acres which have suddenly been planted with mealies or other cereals has been remarkable. Why all this activity? Simply in order to obtain werf rights on the cultivated homestead.

"Now watch the next step which the extraordinary legislation of paragraph 2 permits: 'Where according to paragraph 1 of this article homestead grounds have been reserved by the owner before the proclamation of the farm or piece of ground, he shall be entitled to a mynpacht on such grounds over the whole surface thereof.'

"If there is in the wide world a more pleasant and profitable occupation than being the owner of a farm in the South African Republic about to be proclaimed we should like to hear of it. The combination of delightful ease in splendid climate and the 'potentiality of wealth beyond the dreams of avarice' is quite unobtainable elsewhere.

"Was the law drafted by the capitalist groups? It certainly

looks like it. The internal evidence of 'grasp' is so evident and unmistakable. Just think. 'Over the whole surface thereof.'

"And this phrase brings us to the illogic of the law. For on uncultivated homesteads, 'The homestead on which mynpachts are obtained may not exceed one-thirtieth of the size of the farm.' Why carry the incidence of grant on cultivated and uncultivated land to such vast differentiation.

"Differentiation is the only essence of the Gold Law. Take this particular instance. On the mynpacht only 10s. per morgen is payable—not per month, but per annum. Roughly a morgen is equal in area to two acres, or to one and a half claims.

"Rich corporations last year obtained mynpachts 423, 443, and 435 on Booyens, and No. 439 on Ormonde (the Consolidated Gold Fields of South Africa), No. 441 on Klipriversberg (the Klipriversberg Estate Company), and No. 442 on Mooifontein, scooped in by the Rand Mines, to instance only a few.

"These corporations pay the equivalent of 5s. per claim per annum, whereas the individual has to pay that amount per month. Here is the scale—

Rich corporation	.	.	.	5s. per claim per year.
Poor man	.	.	.	£3 " "

Where does the Government come in? Nowhere. It simply goes out. It receives 5s. instead of 60s. which it would if the areas were in claims.

"Besides this, the Government allows the owners half the licence-money paid on the remaining claims. Only the other day the Chairman of the Modderfontein Extension was calculating how much the company would get from its share of licences. Again, besides, the companies naturally chose the best ground, and in opposition to all rules of equity, pay one-twelfth the rent or licence demanded from the ordinary individual for less valuable tracts. Can it be expected that the wealthy monopolist will buy claims when he gets them—well, practically given him, and only subject to a nominal licence?

"How can it be said in the face of the incontrovertible facts we have adduced that there is no need for an amendment to the Gold Law. We have distinctly proved that Clause 55 is (1) most unfair; (2) severely detrimental to the Government's interests; (3) altogether unduly solicitous for the interest of the owner, *i.e.*, wealthy corporation; (4) antagonistic to the very first article of the Gold Law.

"A little thought will show that this most objectionable clause operates to the restriction of development.

"We know the ostensible reason—not necessarily the true reason—for the introduction of the clause. But it was a reason that has existed for years, only in a very partial manner. More upon the matter in a succeeding article."

In the London edition of the same paper the following appeared on August 25, 1899. It refers to the Minister of Mines' report :—

"There must be some radical fault in a law which, by the influence largely of depression, has permitted the lapse of no less than 69,484 claims last year. On December 31, 1898, there were 132,777 claims registered. The lapsed claims of 1898 are therefore considerably over half the number held at that date. The number of claims has been decreasing very rapidly :—

Year.	Prospectors' Claims.	Diggers' Claims.	Total.
1895 . . .	277,206	4485	281,691
1896 . . .	252,997	7291	260,288
1897 . . .	*	*	202,261
1898 . . .	126,147	6630	132,777

* Separate figures unobtainable.

"The Boom ideas of 1895 induced people to take up claims, some poor, some worthless, some in localities so stricken with fever that it was impossible to exploit them. But on the other hand ventures of promise, properties even of performance also 'lapsed' owing to the owners, in many cases poor men, being unable to pay the heavy dues demanded by the Government on the area of operation. The sum of 5s. per month on prospectors' claims on private ground does not appear heavy, but it forms a severe tax on industry when applied to blocks of ground of reasonable size for mining purposes. We are acquainted with a block of claims in an outside district upon which thousands have been thrown away—now lapsed and up for sale. These claims—and there are instances all over the country—are now in danger of confiscation."

These extracts from current literature before the War will show that public attention was being given to the subject.

Incidence of the Law upon Poor Mines.

But there are one or two phases of the bearing of the Gold Law which have not yet been considered. One is that the law bears especially heavily on poor and undeveloped districts and mines; for example :—The returns for 1898 show that Klerksdorp, with ore averaging 19s. per ton in value, pays 12½ per cent. of its total gold output directly in claim licences.

Heidelberg is worse, paying 33 per cent. of its total output. Potchefstroom has no output and paid £34,112 in 1897 and £12,613 in 1898. While Johannesburg (Boksburg to Randfontein) only pays 1.7 per cent. of its output. The State Mining Engineer might well remark about Potchefstroom district, "all developing on claims and mynpachts is standing still, and none or very little prospecting is being done."¹

This tends to keep the poorer districts undeveloped. While money enough could be obtained for the actual work of prospecting, people fight shy of embarking on an enterprise when such an enormous tax is laid on its initial stages. In the first place, they get tired of being taxed for the State, and in the second place, in a manner which can only be described as grossly unjust for the benefit of private individuals. Then it keeps a great part of the resources of the State locked up until such time as the financiers are ready to make another advance. It secures a monopoly of the business of flotations for a few financial groups, and the enormous profits made on these transactions are allowed to go untaxed. Certainly they have to pay the 4 per cent. duty on the sale price of ground, but three-fourths of the just amount of this is easily evaded by fixing the purchase price at so many £1 shares; for instance, on a company where the consideration for the property is 100,000 shares the tax will amount to £4000, in reality in many cases the £1 share is worth £6 on the market, so that the transfer duty should have been £24,000 instead of £4000. On the other hand, where the company or syndicate is merely a prospecting venture, where the shares given in consideration are of purely problematical value, all depending on the results that will be obtained in prospecting, and where the shares may not be worth more than a few shillings on the market, the 4 per cent. is rigorously exacted on the face value of £1.

Under the law the Government obtains less than a

¹ Out of a total cash capital of thirty thousand pounds expended during five years on claims in the Klerksdorp district by one group of prospectors, over £20,000 was paid in Government dues and claim licences.

tithe of what it ought to get from goldfields of such a character as the Rand. The Treasury, instead of having to negotiate for loans, should be running over with money. The Government should be in a position to enable all the departments of the State to be well and adequately served and to provide for the education and advancement of the people and the permanent improvement of the land. With unlimited funds the contrast between the Transvaal and Egypt in this respect should be striking. There are no international difficulties and hindrances such as Lord Milner has described as existing in Egypt. There are only the internal economic laws of the country itself to adjust and put on a sound and reasonable basis.

A Commission of seven members was appointed by Lord Milner in November 1901 to examine the Gold Law with a view to its amendment. A large amount of evidence was taken, and sittings for this purpose were concluded in February. Considerable attention was paid to the provisions of the old law regarding mineral rights under *werven*, &c., and also to free prospecting throughout the Colony, subject, of course, to suitable regulations. It was noticeable that the Chamber of Mines took up an attitude of decided opposition to the throwing open of the country to prospectors, on the ground that such a course would be detrimental to agricultural interests. The report of the Commission will be received with marked interest by those connected with the development of the Transvaal and its principal industry.

CHAPTER VI

CHANGES REQUIRED IN THE GOLD LAW

The advisability of non-interference with present titles to gold rights already given out by the late Government.

IN the last chapter it has been shown that the Gold Laws of the late Government are in some important respects undesirable, on account of the incidence of taxation being unfairly and unequally adjusted, and there is a great necessity for the immediate alteration and overhauling of the law, especially in regard to its provisions for the collection of revenue; but while this is so, it may not be desirable to go back into the past, even in cases where the law itself has been unduly strained to the advantage of present holders. Mining titles change hands quickly, and the rights they convey speedily become the property of hundreds of thousands of shareholders who had nothing to do with the manner in which they were obtained. Any interference with titles would certainly cause great loss to fall on these people, and this would be at once unfair and unwise. It would cause endless confusion and lead European shareholders to lose faith in the security of the Transvaal investments, thereby hindering and discouraging the influx of fresh capital which will be urgently required if rapid progress is desired.

The total area over which the State had conceded mynpachten (mining leases) up to the 31st of December 1898 was 30,390 morgen.¹ The greater portion of the areas which go to make up this total have been granted on proclaimed farms, others are on farms which are not yet proclaimed, but by granting the mining leases the late Government concluded definite bargains which ought to be

¹ Morgen, equal to 2.1 acres.

honourably carried out, even although the areas in many cases are larger than appears right. The number of claims for which the Government had granted licences at the end of December stood at 132,777; these also are of the nature of definitely fixed contracts and should not be disturbed. Mynpachten, werven, claims, and all pieces of ground definitely given out under the Gold Law by the late Government should be confirmed by the new, but where no such contracts were concluded by the late Government it appears that the whole system should be revised. This question will be dealt with in the next section. The number of gold companies in the Transvaal at the end of 1898 was 137; of that number 103 held properties on the Witwatersrand, 22 of the remaining companies worked quartz reefs. The nominal capital of these Witwatersrand companies was £41,655,939. Forty-one of them paid dividends of £4,883,689 on an issued capital of £18,328,098, or at the rate of 25.08 per cent., as against £2,687,581 paid in dividends by 26 companies in 1897. Thirty-one of the companies produced gold but did not pay dividends. Thirty-one companies with a nominal capital of £12,176,927 produced no gold. The number of non-producing gold companies in the Transvaal was reduced from 106 in 1897 to 40 in 1898.

Mr. Rouliot states in his speech to the Chamber of Mines in 1899, already quoted:—

“As I have said, the dividends declared in 1898 by mining companies in the Witwatersrand District are £4,834,160; they have been earned by forty companies, whose total capital, according to market valuation at December 31st, represented an amount of £55,477,000. The interest returned to the shareholders on an average is therefore at the rate of 8.7 per cent., which is satisfactory considering the soundness of this industry, but cannot be called excessive.”

These figures show that the gold industry of the Transvaal, and especially that of the Rand, as existing before the War, was one which had employed an enormous amount of capital. As a fact, the nominal capital does not nearly represent the market value. It may be estimated that at average market prices, the gold mines of the Rand represent at least

£150,000,000,¹ owned by shareholders of nearly every nation of the world. As has been seen barely one half of the companies earned dividends. The dividend paying list was, of course, being added to every year, and the non-dividend paying list was being shortened, and in the course of a few years it is fairly certain that most of the mines will pay. The economies in working and the skilful and scientific management which the great financial houses had organised, were only beginning to show their effects. In fairness every credit must be given to them for this work, but at the same time the enormous profits they have made out of the sale of shares at greatly advanced prices have never borne any fair share of taxation. They have taken their own share and the Government's share as well, and the Republican Government imposed their first wise and fair measure of taxation in their 5 per cent. tax on dividends. In the chapter on fiscal policy it will be shown that the tax should not only be maintained, but that it should be increased ; further, that this can be done while at the same time lowering the total amount of taxation on the mines. In this direction the present companies cannot properly object to being called on for the fair contribution which they have hitherto managed to avoid, but as regards the titles and payments on properties these should be allowed to stand inviolate.

All this applies to companies already established and which have been granted mining rights on lawful conditions by the late Government, but it in no way invalidates the principle that the Government may change the conditions on which it may decide from time to time to lease out the gold resources of the State for exploitation.

A strong case can be made out for the alteration of the law and the framing of new conditions, and it is to be hoped that the necessary legislation will be immediately considered. Companies undertaking the opening up of new mines would then do so in the full knowledge of the new conditions offered by the Government, and their case would be an entirely different matter. But every consideration shows

¹ This does not include the capital of Finance Companies, such as the Consolidated Gold Fields or the Rand Mines, Limited.

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that it is not only fair but wise policy to guard all the actual contracts disposing of mining properties entered into by the late Government.

The advisability of changing the law with regard to all properties where the gold is still in the hands of the Government, and changing it so as to bring about a rapid development of new mines and new districts in the manner best calculated to benefit People and Government.

It has been shown that under the old law the system of claim licences levied on unproductive ground has tended towards the impoverishment of the people, and has brought no adequate return to the Government, and further by the system of obtaining the rights of option over private land, the large financial houses have been enabled to lock up the gold resources of the country. The system of granting prospecting licences on deep level ground when the gold value is partly known and proved, and where in any case the depth of the reef is beyond the reach of ordinary prospecting operations, is in reality an encouragement to rash speculation, and brings with it no good results in the shape of work done. The revenue in fact has been obtained, not from the actual returns of gold-mining, but from the speculative tendencies of the people.

Technically the Gold Law is a good one, and has proved particularly suitable to the gold-fields of the Transvaal. The system of marking off the properties on the surface and conveying the gold rights contained within the vertical lines, as marked off by the boundaries of the claim or claims, is superior to the system which obtains in many other countries of allowing the reef to be followed in all its dips, spurs, and angles. The Transvaal law in this respect prevents the confusion and consequent lawsuits which are frequent in countries where the other law prevails. And it is especially fortunate that it was adopted by the Transvaal, or otherwise the outcrop companies would have secured for a trifle the great and rich stretches of deep level ground on their dips. The thing to do, therefore, is to retain the good features of the law and to reject the bad.

Having pointed out the evils, it becomes necessary to make some suggestions for their removal and the policy which should be followed in the future. The two great principles on which the Gold Law should be framed are that they should be made for the benefit of the people and not for one particular class, and that they should be made for the benefit of the State ; if this is not done, the time will come, perhaps in fifty or a hundred years, when the Transvaal, having been rifled of its gold, will be thrown aside from the attention of the world like a sucked orange. The country will remain saddled with a great debt which it will then have no means of paying. The other industries of the country will, to a great extent, become extinct, the land be reconverted into desert, and the people fall into poverty. On the other hand, if the gold laws are properly framed the Government will be enabled to pay whatever debt Great Britain may think fair and proper to impose on account of the War, and it will also have sufficient surplus resources to establish the liberal institutions of the country on a sound basis, to develop and encourage other industries than gold-mining, and to create a great and prosperous agricultural future for the country. In other words, to establish the future of the country on a basis other than gold-mining.

To accomplish this, radical changes in the Gold Law and in the fiscal policy of the country must be effected. Tinkering operations and attempts to extract exorbitant revenues from the present mines without compensating alleviations will only check development by frightening away capital. The only way, while taking a fair revenue from the old companies, is to see that the remaining gold assets of the State are managed to the best advantage, and that the present mines are taxed according to the profits they make and not on their working costs.

Coming to the practical reorganisation of the Gold Law it may be well first to look for some guidance from other countries on the following points :—Firstly, the right of the Government to deal with gold independently of private ownership ; secondly, the right of the State to participate in the exploitation of its gold mines.

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Regarding the first point, guidance is best obtained from a consideration of the gold laws of America and of Australia and New Zealand.

In Victoria owners of land which has been given out by the Government since the 29th December 1894 are bound under certain conditions to allow their lands to be prospected and mined for gold. A similar law holds in New Zealand, and the principle is adopted throughout the Australian colonies. A prospector or a holder of a miner's right can enter upon these lands and upon any Government lands and begin to prospect. The prospector's licence or miner's right is obtainable on payment of sums varying from 5s. to £1 per annum. No further payment is required, but it is compulsory on the prospector or holder of a miner's right to work his prospect. After having found gold in what he considers payable quantities, he can secure a lease from the Government on terms which vary in different districts and colonies. In America a similar law prevails.

Regarding the second point, the laws of Rhodesia, of the Klondyke, and of the Portuguese territory may be considered.

For the sum of 1s. the Chartered Company grants a prospector the right to peg out ten quartz reef claims. These ten claims on the outcrop carry the right to follow the reef in all its dips, spurs, and angles. This means a gold area equal to at least 100 claims in the Transvaal. Registration of the claims costs another 5s. per claim. The prospector has to do 30 feet of development work within 120 days of the registration, and 60 feet during every subsequent twelve months, and must obtain inspection certificates for the same, or he may have his claims forfeited. When worked at a profit or after flotation, the claims pay a monthly licence of 10s. The Chartered Company retains half rights in all discoveries on these claims.

The laws of Portuguese East Africa are framed on similar terms. But the Mozambique Company only takes 20 per cent. of the cash or shares received by the claimholder on flotation.

The Canadian Government has adopted a different appli-

cation of the principle. On the Klondyke gold-fields every alternative claim is reserved for the Crown, to be disposed of at public auction or in such manner as may be decided by the Minister of the Interior. In respect of the claims pegged out by the prospector or miner an entry-fee of £3 is charged for the first year. The same amount is payable for each of the following years; in addition the Government takes the following:—"A royalty of 10 per cent. on the gold mined is levied and collected by officers appointed for the purpose, provided the amount so mined and taken from a single claim does not exceed 500 dollars per week. In case the amount mined and taken from any single claim exceeds 500 dollars per week, there is levied and collected a royalty of 10 per cent. upon the amount so taken out up to 500 dollars; and upon the excess, or amount taken from any single claim over 500 dollars per week, there is levied and collected a royalty of 20 per cent. Prospecting is free over the whole territory.

Following the method of securing the best features of these arrangements it appears that the Gold Law of the Transvaal should be remodelled as follows:—

There is first the Government right to secure unhindered exploitation of all goldfields, whether on private ground or otherwise. In securing this, care must, of course, be taken that the owners of private land shall be fairly treated. It is by no means impossible to arrange it so that the owners may obtain a great and sufficient reward for their incidental good fortune in owning gold farms. On the other hand, care should be taken that the prospector or gold finder shall not be hindered by excessive imposts in the way of claim licences, and that he should have free access to the gold-bearing localities. In securing the second principle care must be taken that the Government shall be able to dispose of its gold assets in the most advantageous manner. To achieve these objects the following suggestions are put forward, and from the nature of the principal goldfields—those of the Witwatersrand—it seems that laws framed on these lines, or modifications or improvements of them, must eventually be adopted. The first suggestion is: To proclaim the whole of the Transvaal open ground to prospectors,

excepting only where, in the opinion of the Minister of Mines, advised by the State Mining Engineer, the reefs are proved, as far as it is possible to prove them by prospecting already done. This exception would embrace practically all the present proclaimed areas of the Transvaal. Such portions of these areas as still remain in the hands of the Government, and such portions as may afterwards fall into the hands of the Government, by reason of non-payment of licences, should be retained by the Government, and disposed of in the manner which will be suggested for the disposal of the gold areas retained by or still in the hands of the Government. All the ground proclaimed as open for prospectors should be dealt with as follows : A prospector should be allowed, on payment of a nominal sum of, say, £1 per annum, to take out a prospector's licence. Having provided himself with this, he should be entitled to commence prospecting on any open ground in the State where he may think it likely that gold exists.¹ In the case of his deciding to prospect on ground held by private persons or companies, he should be required to deposit with the Mining Commissioner of the district, a sum in cash, or other sufficient guarantee to make good to the owner any damage done to the property through his prospecting operations. The claim areas allowed for one prospector should not be more than 300 morgen in extent, and as nearly square as the nature or shape of the ground will permit. The prospector should be obliged to peg off and beacon the area in a proper manner. The prospector should be obliged to do sufficient work equal to the expenditure of £25 per month on each hundred morgen pegged. The undivided work of one white man and three Kaffirs should be deemed sufficient for this requirement, provided always that the Government mining inspector is satisfied with the *bonâ fide* nature of the work. In cases of disputes as to this, the matter should be decided according to regulations to be laid down by the Government. In case work is stopped, or in cases of breaches of Government regulations, the ground should be forfeited to the Government, to be re-declared

¹ Homesteads and cultivated lands excepted.

open ground after one month ; or sold or retained by the Government at discretion of the Minister of Mines. Out of the 300 morgen prospected, the prospector should be allowed an area equal to 100 claims. On a prospector finding payable gold, and arranging to work a mine either as a private concern or with capital supplied by a company, he should be obliged to pay the Government claim licences, amounting to 5s. per claim per month. He should further have to pay any tax on dividends or profits or shares, which may be levied by the Government, for the time being. As soon as, in the opinion of the Minister of Mines, advised by the State Mining Engineer or by the Board of Mines, or whatever constituted authority may be established, ground is considered sufficiently proved by prospecting operations, and it is ascertained that the area contains payable gold reefs, the farm or farms or areas should be deproclaimed by notice in the Government Gazette, and no new prospects should be allowed to be opened on such deproclaimed area, it being retained by the Government and dealt with according to the suggestions for dealing with Government gold properties, as will appear later. It should be incumbent on the prospectors to declare to the Gold Commissioner for the district the results of their finds immediately on making them. All prospects should be open to Government inspection, and in case it is shown that the prospector has neglected to inform the Gold Commissioner of the results of his work, all his right and title to the claims he has been working should be liable to be forfeited to the State.

As soon as the farm is deproclaimed, on account of the prospecting operations having satisfied the Minister of Mines and State Mining Engineer that payable reefs exist on the farm or farms or areas, the owner of the farm or his heirs or assignees should be invited to select for themselves a sufficient area from the ground reserved by the Government from each prospector's area, to make up a total number of claims equal to one-tenth of the farm. Over these areas the owner should be granted mining leases or mynpacht rights in the similar manner to that provided by the present Gold Law. The werf right over which at present mynpacht

or mining leases are obtainable should be abolished, and instead, the owner should be entitled to reserve from prospecting and mining all genuine homesteads and cultivated lands, but he should not be allowed any mining rights thereon. In case it is sufficiently proved to the Minister of Mines that gold in payable quantities exists under these werfs or homesteads or cultivated lands, the Government should have the right to expropriate such homesteads and lands at a fair valuation, that is a valuation not reckoning the gold value. This valuation should be arrived at by arbitration, or by means of a land court constituted to deal with these matters. The Government should then dispose of these gold rights under these areas according to the regulations for disposing of Government gold rights. As soon as the owner has been granted his mynpacht rights over one-tenth of the area of his farm, which has been proved by prospectors, he should have no further claim for compensation for damages on account of shafts and holes made in mining operations, and although he may be allowed to graze his cattle and make use of such areas as are not actually required for mining, he shall be deemed to have been fully recompensed for the loss of these areas by the following payment, viz., one-fourth of the revenue which the Government may derive from such a farm or farms or areas, whether from licence moneys, sale of gold rights, or other levies of the Government. Sums equal to one-fourth of these levies should be paid to the owner of the farm until he has received an amount equal to £5 per morgen over the whole surface of the farm. This payment, together with the one-tenth secured to him under mining lease or mynpacht, and together with the purchase price of his werf or homestead lands, shall be considered a full and absolute payment for all his rights to the property, and he should be obliged to give transfer to the Government of the same on the last amount being paid. The exploiters of all these various areas, whether claims obtained by prospecting, mynpachts granted by Government, rights bought from the Government, such as Government gold rights on werf areas, or Government gold rights on Government claims, should, in addition

to the dues payable to the Government in respect of the privileges secured by purchase, be required to pay over and above those dues, all such taxes on profits or dividends which the Government may from time to time impose. This would get rid of the iniquitous tax in the shape of claim licences levied for the benefit of individuals.

The best plan for the Government to pursue in disposing of areas over which it reserves the gold rights, whether these rights are those of the Bewaarplaatsen retained under the Gold Law, or unpegged claims, or on ground which had not yet been proclaimed by the late Government but which is known to contain payable gold reefs, and has consequently been withheld from the general proclamation, or on ground which may constitute Government blocks of claims on new gold-fields, or gold under the werfs or homesteads situated on new gold-fields, or on ground which may be considered to have been sufficiently proved by the work of prospectors on adjoining areas and which has been notified as no longer open to prospectors—on all such ground over which the Government retains the gold rights, the following method seems to be the best :—Where in the case of Bewaarplaatsen and Government blocks, the areas are fixed and known, they should be sold according to the number of claims the area contains. In cases of large areas not yet cut up into blocks, the ground should be parcelled out, on the advice of the State Mining Engineer, into blocks of suitable size for mining companies, according to the estimated depth of the reef. On all these blocks an upset price should be set, such price to be arrived at after careful investigation by the State Mining Engineer, and the Government should hold periodical sales by auction of these blocks. Full particulars of the terms of sale and all known particulars about the ground should be published in the Government Gazette, but the purchasers should have no recurrence against the Government for any inaccuracy of judgment on the part of the State Mining Engineer. The terms of sale and all the particulars should not only be published in the Government Gazette but also in the leading Colonial and European papers for a period of from three to six months, during which inspection of the

ground should be permitted and all available data and information given to intending purchasers. On the day appointed the ground should be put up at the upset price and sold to the highest bidder, on whatever terms that may be deemed advisable from time to time, and published in the Government regulations. Instead of selling the claims or areas for cash the Government could take shares instead, as is done in Rhodesia. This might suit the buyer, and it would in the end pay the Government better. Both plans could be tried. After the sale sufficient time should then be given for the development and equipment of a mine or mines on the block thus disposed of. If, within such reasonable time as may be deemed fair by the Government and published in the regulations, no progress, or insufficient progress, has been made towards the development of the mine or mines, sufficient notice should be given in writing that if work, to the satisfaction of the Minister of Mines, is not commenced within, say, six or twelve months from the day of notice the gold rights on the ground shall be liable to be forfeited and revert to the Government. On all the areas under which the gold rights are so disposed of and sold it should not be considered that the ground or gold itself is disposed of, but only the right and facilities to mine for and recover gold. On all such areas a claim licence of 5s. per claim per month should be payable to the Government. Taxes on profits and dividends should be recoverable by the Government from the operations on such ground equally with any other. Regarding Government ground, that is ground which does not belong to private owners, the same rule should apply, the only difference being that the Government would retain all the benefits under the law without having to pay away anything to surface owners.

These alterations in the Gold Law, or some modifications of them, would secure the ends desired, with the least possible change in the existing system. The owner would still have his mynpatch and a fair and liberal compensation for disturbance. The prospector would be free to pursue his calling without being unduly weighted by taxation, and he could go and prospect wherever he might think gold is likely to exist.

He would be put on the true basis of a prospector, and not as at present on that of a speculator. The Government, besides its ordinary revenue, would be able to dispose of the greater part of the large reserve of gold areas still in its hands on the most advantageous terms; besides, the great financial houses may as well buy from the Government as from the speculator. In Chapter VII. an estimate is made of what amount the Government would be likely to receive every year for the gold rights on Bewaarplaatsen and on those areas retained for its benefit. The amount, as will be seen, is a surprisingly large one to begin with, and would grow enormously every year; and if the plan is adopted, all fears about over-taxation of the country on account of the war debt may be abandoned. Not only would the Government derive large sums from the sale of the present areas held by it, which are known to contain gold, but the free and vigorous prospecting which would be encouraged under the proposed system would almost to a certainty open up further great areas of payable gold-bearing ground. Instead of sixty miles of Main Reef there would in a few years in all probability be 100 miles, with new rows of mines stretching at intervals from Randfontein to Klerksdorp in the west, and from Geduld through Heidelberg to Hex River on the east. Outside districts also would receive attention, and flourishing mining communities would spring up all over the country. All these are at present locked up by the conditions of the mining law.

The Government revenue derived in the manner suggested would increase by leaps and bounds, and the Transvaal would soon be in a position to pay interest on and to provide a sinking fund for whatever portion of the war debt she may be called upon to pay.

The present companies would have no grievance, as their taxation would not be increased, but actually reduced; rather would they be in a better position than before, because, owing to the reduction of costs by cheaper labour under a settled government, lighter railway rates, and the removal of the imposts caused by the monopolies, their great reserves of low-grade ores could be worked. The vicious principles of

the old law would be got rid of and the good ones retained ; the contributions of the gold-mining industry would be obtained in the same manner as contributions from any other industry, viz., by taxing result, not effort, by taxing for the benefit of the Government and not for the benefit of private individuals and companies. If the old policy is continued the revenue will be insufficient. Enterprise will be confined to the big houses, and the general population will continue discontented and impoverished.

A quotation has already been made from the *Star* newspaper, which, before the War, was supposed to be the capitalist organ, and in the passage quoted it is distinctly agreed that a change is necessary. To show that the capitalists themselves recognise the reasonableness of a change the following letter is inserted. It is from a member of one of the great financial groups in answer to a request for his opinion. He says :—

“I think alterations could be made in the existing Gold Law to provide for your suggestions without affecting it fundamentally. Under the existing law any private party, by taking out a prospector's licence, can prospect for gold on any *unproclaimed* farm where he believes gold to exist.

“All he needs is permission from the owner to prospect, which should not be unreasonably withheld. A clause might be introduced in the Gold Law providing for this privilege. On making application through the authorities he would have to satisfy them as to his *bona-fides*, and the money he has at his disposal for the purpose of prospecting. Through the authorities he would then get permission to prospect, and some provision would have to be made in the law that in the event of his discovering a payable reef he should on proclamation be entitled to peg out a certain number of claims.

“By the adoption of such a measure he would be freed from paying any licences whatever during the period of prospecting, and would be entitled to certain owners' rights should on his find the farm be proclaimed. There is one difficulty I see in several parties prospecting on one farm ; this, however, might be overcome by some provision, protecting their interests as well. By introducing some legislative measure as suggested you do away with adjusting the principle on which the Gold Law is framed, which you know is generally considered a good one, and is not likely to be exchanged for any other. As to exemption or payment of licences on proclaimed area, always bear in mind that in most instances the outcrop

would be retained by the owner under his mynpacht owner claims and vergunning¹ rights, and deep level working could only be carried out by the rich and not by the poor. I personally favour prospecting grants on *unproclaimed* areas, which gives the poor or individual miner a chance."

It will be noted that the remedy suggested in this letter is to make it compulsory for owners to allow prospecting on their ground. The question of the Government reserving areas for itself is not considered, but a war debt has to be paid by the Transvaal, and it is evident that this is one of the easiest ways of getting part of it. If some such plan is not adopted the whole cost of the debt will have to be borne by the present companies and the Uitlander people. The people pay enough already, and the smallest charge that can be levied on the present holders of Transvaal gold shares in England, France, and Germany will, in the long run, be the best for the country. They have purchased their shares at prices which, even with the present enormous profits, only yield them from 5 to 10 per cent. return. This is little enough considering the risks attending even the best gold-mining ventures, which the mines of the Witwatersrand may rightly be considered.

Few changes are required in the law to effect this radical improvement, and any apparent difficulties in carrying it out can easily be overcome.

¹ Vergunning = first selection.



PHOTO BY BURTON BENT, JONATHANVILLE

CYANIDE WORKS, ANGELO DRIEFONTEIN MINES

Showing vats in which the sands and slimes are treated by cyanide of potassium

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CHAPTER VII

BEWAARPLAATSEN AND OTHER GOVERNMENT GOLD PROPERTIES

*Bewaarplaatsen.*¹

THE number of Bewaarplaatsen on the Rand retained by the Government is fifty-seven, with a combined area of 1443 claims. Some are north of the outcrop of the Main Reef series, and are consequently of little certain value. Others are situated far to the south. Extravagant ideas as to the value and extent of these areas appear to have entered the public mind. Sir Charles Dilke referred to them in a speech at Coleford in October 1901, when he said that these rights were valued by the mining department of the late South African Republic at £40,000,000, but this statement must surely be incorrect, or perhaps a cipher has been added by mistake in printing Sir Charles Dilke's speech. The following is an estimate of the market value of these Bewaarplaatsen based on the current values at which claims in similar positions with regard to the reef were taken into flotations before the War. The areas are designated by numbers only for the reason that it was not possible to obtain correct information about the ownership of the surface rights. Nor is it possible to show the positions of each one without a map. They are situated here and there right along the Rand. Many mining men will doubtless be able to recognise the various blocks from the following general descriptions:—Nos. 1 to 12 inclusive are situated on the Randfontein and Lancaster—French Rand sections of the Witwatersrand; No. 13 to 15 on the Roodepoort section; Nos. 16 to 20 on the Vogelstruis—Main Reef section; Nos. 21 to 24 on the Langlaagte Star—Paarl Central section; Nos. 25 and 26 on the Langlaagte—Crown Reef section; Nos. 27 to

¹ Bewaarplaatsen = reserved places.

29 on the Bonanza—City and Suburban section ; Nos. 30 to 38 on the Meyer and Charlton—Witwatersrand section ; Nos. 39 to 41 on the Balmoral—Blue Sky section ; No. 42 on the Boksburg—Apex Mines section ; and No. 45 on the Benoni—Modderfontein. Nos. 4, 4*a*, 4*b*, 4*c* are situated north of the outcrop of the Main Reef series.

BEWAARPLAATSEN AND WATER RIGHTS.

Number.	Mining Claim Area.		
1	28.84		
4	78.72		
4 <i>a</i>	1.92		
4 <i>b</i>	1.44		
4 <i>c</i>	3.84		
3	61.44		
11	10.56		
11 <i>a</i>	1.92		
12	5.76		
		194.40 at £50	£9,720
5	10.56		
3 <i>a</i>	10.56		
40	10.56		
		31.68 at £100	3,168
2	7.50		
7	27.84		
		35.24 at £200	7,068
8	74.88		
8 <i>b</i>	2.88		
21	65.88		
21 <i>a</i>	3.18		
22	72.96		
23	29.76		
23 <i>a</i>	1.44		
24	12.48		
42	31.20		
		294.66 at £300	88,398
19	24.96		
8 <i>a</i>	15.36		
9	53.76		
6	18.24		
13	23.04		
		135.36 at £500	67,680
17	11.88		
18	11.40		
16	36.60		
10	11.52		
		71.4 at £600	42,840

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Number.	Mining Claim Area.		
20	85.44		
33	13.44		
34	8.59		
35	42.24		
37	72.00		
38	63.63		
41	43.20		
43	89.28		
		417.82 at £1,000	417,820
14	18.24		
15	16.32		
		34.56 at £1,500	51,840
35 ^a	18.24	18.24 at £2,500	45,600
36	3.09		
39	12.24		
		15.33 at £3,000	45,990
31	10.86		
31 ^a	2.88		
31 ^b	1.86		
31 ^c	0.83		
		16.43 at £4,000	65,720
25	5.76		
26	54.72		
29	36.58		
30	24.82		
32	34.14		
		156.02 at £5,000	780,100
28	7.29	7.29 at £6,000	43,740
27	15.36	15.36 at £12,500	192,000
		1443.89	£1,861,684

(Say one and three-quarter millions.)

In 1898 the *Johannesburg Star* published estimates of the value of certain deep-level claims belonging to the Rand Mines, Limited. These estimates bear on the subject of the value of the Bewaarplaatsen in the central section of the Rand :—

Number of Claims.	Situated South of	Distance of Northern Boundary from the Outcrop.	Price per Claim taken.	Total Value.
		Feet.	£	£
174	Nourse Deep	4,000	1,500	261,000
132	Geo. Goch and Wolhuter	1,500	2,500	330,000
48	Village Main Reef	2,000	6,000	288,000
4	" " " "	7,500	1,500	6,000
13	Robinson " " " "	2,750	7,500	97,000
3	Langhaagte Deep	4,500	2,000	6,000
15	United Lang. Deep	3,000	1,500	22,000
111	Crown Deep and Lang. Deep	3,750	5,000	555,000
500			3,130	1,565,000

The foregoing estimates of value are not based on the gold value per claim. If the Government waited for ten or fifteen years until the neighbouring mines were worked out, and access could be obtained to the areas through the then disused shafts, as would be possible in some cases, much better returns could be obtained. For instance, No. 27 is situated close to the Robinson Central Deep. There are fifteen and one-third claims, and they will each contain approximately 40,000 tons of South Reef and Main Reef Leader ore of a gold value of about 60s. per ton, and a profit value of 32s. 6d. :—

15 at 40,000	.	.	.	600,000 tons.
600,000 at 60s.	.	.	.	£1,800,000 gold value.
„ at 32s. 6d.	.	.	.	£975,000 profit value.

At the price estimated of £12,500, the Government would obtain immediately only as follows :—

15.36 at £12,500	.	.	.	.	£192,000
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so that instead of selling the claims outright, it would pay much better to wait or to take shares in the company taking over the claims instead of a cash price.

This method would probably best suit both the Government and the buyers. In some cases the companies maintain that they have some sort of promise of title from the old Government, and where there appears to be some good foundation for the claim a compromise on these lines might be effected.

Other Government Gold Areas.

The claims on unproclaimed farms on the dip of the Main Reef series along the present worked Rand, which, under the suggested altered law, would remain in the hands of the Government, may be estimated as follows. These estimates are only of such ground as would come within the limit of distance from the Main Reef, at which the reef may be expected to lie at not more than 6000 feet deep :—

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Reitvlei	about 1000 claims.
Mooifontein	" 500 "
Witpoort, Reitfontein, and Brakpan	" 2000 "
Modderfontein, Welgedacht, Geduld, } Klipfontein, and Holfontein }	" 3000 "
6500 claims.	

These are all deep-level reef areas, and if put in the market at once would not be likely to bring more than an average of £100 per claim.

In addition to these areas, there are large areas on the farms Elandsfontein, Klipriversberg, Vierfontein, Ormonde, Diepkloof, Klipspruit, and Luipaard's Vlei, which, although much beyond the point at which the depth of 6000 feet is expected for the Main Reef series, would all be pegged if declared open ground under the old law. These farms could be included in the general proclamation of the Transvaal under the suggested new law as prospecting areas under the conditions explained in Chapter VI. Besides the Main Reef there are other series of reefs existing on them, portions of which might be found payable. The Government would in that way ensure that the areas would be prospected for such reefs.

These areas just considered, being, as they are, the leavings of the Rand, must not be considered as a criterion of what the Government would obtain for the claims which would be retained under the proposed new law on extensions of the Main Reef eastwards and westwards. Large areas comparatively near the outcrop, or even on the outcrop itself, would, in these cases, fall to the Government, and the value of some of the claims would run into thousands of pounds. There are also the possible new mines that might be opened in other districts such as De Kaap, Lydenburg, and the northern goldfields. Assuming that the new Government adopts a waiting policy, and either sells these gold properties as it finds that the market can take them up, or gives them out on condition of sharing in the profits of the mines (it should have no control or say in the management of the exploiting companies, for the reason that Government interference with private affairs is

not desirable), the revenue from this source to begin with might be estimated at £250,000 a year, increasing in a few years to £500,000 or more, and after ten years to anything between one and three millions. It would all depend on the success of future prospecting, and there is good reason to take the most hopeful view if the suggested changes in the Gold Law are adopted.

CHAPTER VIII

THE COALFIELDS

COAL ranks next to gold in importance among the mineral resources of the Transvaal.

In 1898 thirty-three coal-mines were being worked in the State. The total number of tons brought to the surface was 1,907,808 tons. The value is returned by the State Mining Engineer at £668,346, or an average of about 7s. per ton at the pit-head. By far the greater part of this output was obtained from coal-mines on the East Rand, Boksburg district having produced 1,239,184 tons, and Heidelberg about 300,000 tons. The output of Middelburg was also about 300,000 tons. The capital of coal companies is shown as follows :—

	Nominal Capital.
Boksburg and Heidelberg, 10 companies	£2,715,000
Middelburg, Lydenburg, and Pretoria, 7 companies	1,748,000

Of these only three paid dividends, the total amount paid being £76,000 on a total nominal capital of £960,000. Fourteen of the companies produced coal, but paid no dividends.

Coal exists in immense quantities in the following districts of the Transvaal—Vryheid, Wakkerstrom, Piet Retief, Standerton, Ermelo, Carolina, Middelburg, Heidelberg, and Pretoria.

Geologists are almost unanimous in the opinion that the coal-beds of the Transvaal belong to the Triassic age; that they are, in fact, the Transvaal representatives of the Molteno beds of the Colony, and that the coal-beds of Natal, although occurring on a lower level, belong to the same geological period. All South African coals agree in certain well-marked characteristics. In some places the beds attain an enormous thickness, as, for instance, at Zuurbekom, south-west of Johannesburg, where a seam of coal has been

proved to have a total thickness of 211 feet. At the Great Eastern Colliery, east of Johannesburg, a seam is found 75 feet thick. These great thicknesses are not throughout made up of marketable coal. All coal seams in the Transvaal, whether thick or thin, as a rule consist of laminated layers of different varieties and qualities. There is, first, what is known in the country as "bright coal." It may be classed as bituminous or semi-bituminous. In some cases it has a percentage of volatile matter as high as 38 per cent. The average percentage of ash is about 8 per cent., with fixed carbon about 65 per cent. The percentage of sulphur is low, being under $1\frac{1}{2}$ per cent. Besides being a good gas producer, this bright coal makes a first-class coke almost equal to that produced in the North of England. Coal of this nature exists in nearly all the seams in the Transvaal, the thickness of the layers being variable from a few inches up to 5 feet. Tests of its calorific value show that one pound will evaporate twelve and a half pounds of water. In this bright coal thin bands or streaks of dull coal occur. And no doubt the comparatively high percentage of ash for coal of this nature is attributable to these thin streaks.

The other layers of the coal seams consist of what is known as "dull coal." It has a higher percentage of ash and less volatile matter. The better qualities, those in which the ash is from 8 to 12 per cent., may be classed as steam coal. It is not liable to clinker, and has comparatively high calorific value. Tests have shown an evaporative power of eleven pounds of water for one pound of coal. On some of the best seams in the Middelburg district the two varieties are mined together, the product being a good first-class coal almost equal to good Tyne coal, either for house purposes or for steam raising.

The coalfields of the Southern Transvaal cover an area of approximately 10,000 square miles, that is, taking the actual coal areas only, and leaving out the patches within the fields which are barren of coal, owing to the coal strata having been denuded. Besides this great area there are other coalfields in the Transvaal. One which may develop into great importance lies along the Portuguese border. The thickness

ranges from a few feet to over 200 feet, and the quality varies from bright bituminous coal to dull carboniferous shale with 50 to 60 per cent. of ash. An estimate of 6 feet of good coal over the whole area is one which in actual work is very likely to be exceeded. Six feet of coal will yield approximately 6,000,000 tons per square mile, so that 10,000 miles would yield on this basis over 60,000,000,000 tons. Of course the total quantity of coal is about five times this amount, but about 80 per cent. of the whole may be reckoned for the time being as valueless. If the time should come when the world begins to feel real scarcity of fuel means might be found to utilise these low grade reserves of the Transvaal. For the present there is enough good coal to go on with. At 6s. 8d. per ton, the value of marketable coal lying available in the Transvaal would amount to £20,000,000,000.

In an article which appeared in the *Nineteenth Century* in 1898¹ the following estimates of various coal supplies of the world were given :—

United Kingdom	198,000,000,000 tons.
Germany	112,000,000,000 „
France	18,000,000,000 „

The writer estimated the probable amount of Transvaal coal at only 15,000,000,000 tons. A closer estimate would be :—

Total Transvaal coal	300,000,000,000
Deduct 80 per cent. inferior coal	240,000,000,000
Net quantity of good coal	60,000,000,000 tons

The districts where the coalfields are best developed geologically, and where the best qualities of coal are found, are Middelburg and Ermelo. In these districts the percentage of good coal to the whole bulk is higher than in the other districts. A considerable quantity has already been sent to Delagoa Bay for navigation purposes, and, owing to its high heat raising power and its low percentage of ash and sulphur, it has found a good market among the shippers.

¹ Benjamin Taylor in the *Nineteenth Century*, July 1898.

Coal for a market of this kind must of course be picked and dressed. Hitherto, too little attention has been paid to this work, and only a few of the collieries have the necessary machinery; but as the export coal trade develops this state of affairs will be altered, and navigation coal from the Transvaal may be expected to take a high place among South African coals in the market. The rapid development of the Natal coal industry during the last few months indicates what can be done. One chief necessity for stimulating this trade is the authorisation of railways required to tap the coalfields. A railway connecting Springs with the Delagoa line beyond Middelburg would traverse the richest coalfields in the country, and the other line which was authorised before the War, that from Ermelo to Machadodorp, would open up another first-class district. Taking Middelburg as the centre, the distance to Delagoa Bay is only 250 miles. At a railway rate of $\frac{1}{2}$ d. per ton per mile, which should be a remunerative rate for down traffic to the coast, the freight to Delagoa Bay would only be about 10s. 6d. per ton. A halfpenny per ton per mile is the rate charged by the Cape Colonial railways for intercolonial traffic. In fact, for traffic coastwise the rate might even be reduced to $\frac{1}{4}$ d. Assuming that the coal could be mined and sold at the pithead at 10s. per ton after paying working costs and all charges and leave a profit at that figure, the coal could be sold at Delagoa at about 21s. per ton; at a rate of $\frac{1}{4}$ d. per ton per mile it could be sold at 15s. per ton. The ruling price at present for Natal coal at Durban is 30s., and the supply, on account of lack of railway facilities, cannot keep up with the demand. Some of the Natal coal companies are paying 10 per cent. every three months in dividends, and carrying equal amounts to reserve. The profit on Natal coal at the price of 30s. is 15s. per ton. To open the Transvaal coalfields for a profitable export trade, one of the principal necessities is an intelligent adjustment of railway tariffs. Needless to say this could not be obtained from the Netherlands Company. The great enhancement in value of coal in Europe affords the opportunity, and the new Government should leave nothing undone to develop the Transvaal coal industry. Besides the local demand in the country

itself, it should become a strong competitor for the shipping trade of the Southern Hemisphere.¹ Japan and Australia have secured the coal trade of the Far East, and South Africa is certain to have similar success in the South. The Transvaal must be energetic or Natal will get the monopoly.

The following is a description of Middelburg coal by Mr. A. Crosby, mining engineer :—

“There are five seams of coal proved in the district, four of which are workable. No. 1 seam varies from 6 to 9 ft. in thickness. The top part, about 2 feet 6 inches, is a gas coal, and the lower part is a good steam coal. It is opened on the farm Wolvekranz. On some farms this seam has been carried away by denudation. No. 2 is a thin seam, 10 inches to 2 feet 4 inches in thickness, of bright gas coal, giving as high as 38 per cent. of volatile matter, and producing good coke. This seam is in most places too thin to be payable, but at various points where it is thickest it could be worked on the ‘long wall’ system at a good profit as a gas-producing coal. It covers most of the area, but it is also denuded away in places. No. 3 is known as the Oliphant’s River seam. It lies from 40 to 60 feet below No. 2, and is a very valuable seam, producing gas, house, smithy, and steam coal. It varies in thickness from 10 to 15 feet. The top part, 3 to 5 feet, is a gas and smithy coal of high quality, and produces good coke. The lower part gives carbon up to 69 per cent., and ash as low as 5.8 per cent. This is the seam worked at the Maggie Mine, and it covers most of the area. No. 4 seam lies below No. 3, and at some points is in conjunction with it—as at Wolvekranz, where the combined seams make a total thickness of 25 feet. At other points it is as much as 40 feet below. No. 3. This seam varies from 3 to 12 feet in thickness. It is a bituminous coal, but has not been worked sufficiently to allow of a fair estimate of its quality being made. No. 5 seam lies about 100 feet below No. 3, and is the thickest seam in the series. It has so far been proved by boreholes only, the results of which give promise that it is a seam of good quality. At present shafts are being sunk in several places to cut this seam, and it is not unlikely that it may prove the most valuable of the lot. These coals are all bituminous, and may be divided into two classes—one with a dull and somewhat streaky lustre, with volatile matters about 26 per cent. and carbon 62 to 69 per cent.; the other is a bright coal, and contains more volatile matter, from 27 to 38 per cent. It burns with a long flame

¹ In the article quoted above Mr. Taylor states that of a total coal supply in one year of 574,532,600 tons, 550,935,000 came from the Atlantic basin, Europe contributing 369,565,000 tons, while only 22,097,600 tons came from the Pacific basin.

and gives gas of high illuminating power. The following comparative analysis may be found interesting :—

Mean of eleven seams of Welsh coal—

Fixed carbon		82.79 per cent.
Volatile matter		12.09 „
Ash		3.67 „
Sulphur		1.45 „

100.00 per cent.

Specific gravity, 1.32.

Calorific effect—One pound evaporates approximately 13 lbs. of water.

Mean of seven seams Newcastle-on-Tyne coal—

Carbon		66.54 per cent.
Volatile matter		28.9 „
Ash		3.49 „
Sulphur		1.07 „

100.00 per cent.

Specific gravity, 1.28.

Calorific effect—One pound evaporates approximately 12.75 lbs. of water.

Mean of four samples of Middelburg No. 3 seam—

Carbon		62.57 per cent.
Volatile matter		27.52 „
Sulphur		.79 „
Ash		7.37 „
Water		1.75 „

100.00 per cent.

Specific gravity, 1.32.

Calorific effect—One pound evaporates approximately 12.50 lbs. of water.

“Other Transvaal coals used on the Rand have, from 18 to 28 per cent. of ash, and their mean calorific effect is, approximately, one pound evaporates $8\frac{1}{2}$ pounds of water. Taking the calorific power of the best Welsh coal as 100, that of Middelburg No. 3 would be 96, and other coals at present in use 64. It will be noticed that many of the characteristics of Middelburg coal show it to bear great similarity to that of Newcastle-on-Tyne, and the heating power of both is almost equal. The sulphur in Middelburg No. 3 seam varies from .50 to 1.30. There is no coal found altogether free from sulphur (some English coal containing as much as 3.50 per cent.), and, as it is generally agreed that if the percentage of sulphur does not exceed 1.50 the coal is suitable for metallurgical

purposes, this seam may therefore be considered a good coal for metal workers. Its coke already commands a good price on the Rand. As a smithy coal the top part is excellent. It cakes well, and is comparatively low in ash. For shipping purposes the lower part of No. 3 seam should eventually command a large sale. Its percentage of sulphur is as low as that of most English and Welsh coals. In its heating effect it is about equal to these, and it has a fairly low percentage of ash. The heating effect is very rapid, and ships using it would be able to get up steam very quickly.

"The only hindrance to the development of this great industry is the absence of adequate railway facilities and moderate freight rates. The N.Z.A.S.M.¹ have to send their empty trucks to Delagoa Bay in any case, and if they would reduce their rate from Brugspruit to Delagoa Bay to, say, 8s. per ton, every train going down would earn about £60 at very little additional cost above that required for taking down the empties. If this supply of Middelburg coal were available on the Rand it would go far to reduce working costs. Fewer boilers would be required, less wear and tear, and more uniform steaming power."

It will be seen that Mr. Crosby considers that the best Middelburg coal only falls about 4 per cent. behind Welsh coal. In this he is probably over sanguine. By very close sorting such a value might be attained, but for ordinary working production a quality coming within 10 per cent. of Welsh is more probable. The steam-raising power of such coal is almost equal to Welsh for ordinary shipping, because it only means a certain amount of extra stoking, and the taking up of 10 per cent. more storage-room than the lesser quantity of Welsh coal required to produce the same power.

Some experts have stated about Transvaal coal that it will not make good coke, that the product is too soft and too impure to be used for metallurgical purposes. But the reason for this statement, which may be accepted as true in the past, is that proper methods have never been applied to coke production in the Transvaal. In fact, the preparation of coal and its products for the market forms a branch of industry which is in its most primitive stage.

In the North of England good coke is made from vastly inferior coal to the bright coal of Middelburg. The best and latest machinery is required in the manufacture of coke as in the manufacture of anything else, and a rich reward awaits

¹ Netherlands Railway Company.

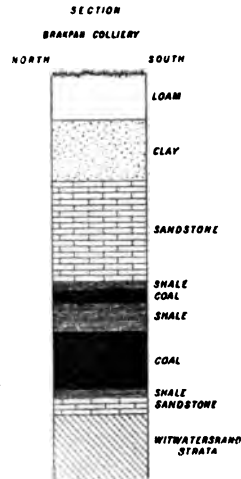
any one who enters the field adequately equipped for the production of coke. One enterprising little company, the "Home Coal Estates," has done something in this direction with marked success. Its products are in great demand on the Rand, greater, in fact, than it can satisfy, and the trade is only in connection with the limited requirements of the mines in the smelting of gold. With proper machinery which would remove most of the impurities, and especially the greater part of the iron pyrites from the coal, a tough high-class pure coke could be made from Middelburg bright coal, and such a coke would speedily create a market for itself. The smelting of iron, lead, and copper would be made possible, with the consequence that numerous mines possessing rich ores of these minerals would quickly be opened up. Iron foundries and steelworks would begin to appear, and a Transvaal Black Country would come into existence. This applies especially to Middelburg, Pretoria, and Lydenburg districts.

The opening up of a profitable coke industry and export trade in coal would allow coal for local consumption to be supplied cheaper than before. At present the consumption of coal on the Rand amounts to about 1,100,000 tons per year. That quantity does not include the coal used on the railways. By the reduction of railway rates and cheaper first cost at the mines, together with other economies probable under the new Government, cheap coal will certainly help to bring the lower grades of gold ore within the range of profitable working. Mr. F. Eckstein, in his speech at the Rand Mines' meeting in 1898, stated that the difference between the Netherlands Company's exorbitant rates for coal and the Free State and Cape Colonial rates cost the Rand Mines subsidiaries for one year the sum of £45,000. Cheaper freights will also tend to enlarge the market for coal. Further, under the new Government new developments of industries may be expected, and factories will spring up to supply the wants of a rapidly increasing population. All these will require new railways and more coal.

A bright future, therefore, appears in store for the coal industry of the Transvaal. In the past it has been one of

the great economic factors of the country ; without the coal-fields adjacent to the Rand the gold industry of the Transvaal would never have attained to the important position it holds to-day, only the richer mines could have been worked, and the fame of the Transvaal as a gold-producing country would probably have ranked behind that of Australia. With the power supplied by coal, notwithstanding the heavy transit rates and other hindrances, it has grown to be the greatest in the world. Cheaper coal may not only be expected to help greatly in extending gold-mining, but it might in the future cause other young industries working on other minerals and raw materials to spring up with a vigour only second to that of the Transvaal's first great industry. The wealth of England and Scotland has been created by the industry of the inhabitants, aided by the great deposits of coal and iron available in these countries. The Transvaal, besides having gold, has got both coal and iron in abundance, and of the best quality.

The present tax of one per cent. on the value of coal mined should be taken off.



CHAPTER IX

DIAMONDS, IRON, SILVER, LEAD, COPPER, AND OTHER MINERALS ¹

WHEN the emigrant Dutch farmers, who left the British colony of the Cape of Good Hope, in 1836 crossed the Vaal River into what is now known as the Transvaal, they were struck with the evidences of mineral wealth, which were so conspicuous a feature in the territory they had decided to occupy. Yet though they were convinced that gold and other valuable products of the mineral kingdom existed, they were loth to encourage their development, fearing that the influx of strangers would prove a source of danger to their independence. So when the earlier gold-seekers announced the discovery of gold in the years 1852-54, the authorities warned them that any attempt to make the find known to the world would be followed by summary ejectment from the country. This did not prevent the farmers themselves from spreading rumours abroad regarding the wealth which lay hidden in the rocks on their properties.

"Op myn plaats is veel Goud, koper en andere mineralen" was in every farm-owner's mouth, so soon as the stranger questioned him about his property. ("On my farm there is plenty of gold, copper, and other minerals.")

But even their sanguine statements were to a great extent correct, though they knew not at the time that ere the generation which had entered the land would pass over to the great majority, they would be overwhelmed by the influx of gold-seekers whose advent they so much dreaded.

The richness of the Transvaal does not by any means end with the minerals gold and coal already described.

¹ This chapter, with the exception of the notes from the *Standard and Diggers' News* on the Pretoria Diamond Fields, and the notes on Lead Smelting, has been contributed by Mr. David Draper, F.G.S., &c., of Johannesburg.

Copper, tin, lead, cinnabar, zinc, iron, and other metals exist in greater or less abundance, only awaiting the advent of intelligent development, aided by capital, to add to the resources of the country.¹

This and the following pages will be devoted to a description of the occurrences of these minerals which have not up to the present been developed to any extent, or which are entirely untouched.

Diamonds.

Though diamonds were known to exist in the country lying north of the Vaal, and especially in the vicinity of Pretoria, so far back as 1869, yet the source from whence the scattered diamonds were derived was only discovered in 1897, by the finding of the "Rietfontein"—now known as "Schuller's" mine—about sixteen miles eastward of Pretoria on the main railway line to Delagoa Bay.

A few small diamonds had been previously picked up in the Pienaars River, a stream which takes its rise in the neighbourhood of Rietfontein, but the finders were under the impression that the stones found had been dropped by natives, or transported by other means from the Kimberley mines.

The theory advanced by early diamond diggers, that diamond pipes could only exist in lime-covered country such as that of Griqualand West, retarded prospecting operations in the more rugged ranges of the Transvaal where lime was almost entirely absent.

Since the discovery of the "Rietfontein" ("Schuller's") mine, which has proved to be a true diamond-bearing pipe,

¹ Discussing the coal and other resources of the Transvaal, M. Daniel Bellet, in the *Moniteur des Interets Materiels*, July 1899, says :—"The Transvaal is a mining country in the largest sense of the word, iron, copper, cobalt and argentiferous lead are found in abundance, and the coal-beds form a prolongation of the well-known seams of Natal. Hitherto these ores and coal-beds have not received adequate attention. The coal production has been practically absorbed by the gold-mines, and the want of proper means of communication has prevented the export trade from developing. But this indifference cannot be maintained, and without dwelling upon the copper ores which are exceptionally rich, nor upon those of lead equally productive, nor on the hematite and magnetic ores which are found in millions of tons, and if worked would produce an enormous quantity of iron, it may be said that the presence of iron in a country is, in reality, more useful to it than gold."

three others of a similar nature have been discovered in the vicinity. One of these is situated partly on Rietfontein, extending eastward into the adjoining farm. The third is known as the Montrose mine, and is being worked by the Transvaal Diamond Mines, Limited. The fourth pipe was discovered by the occurrence of the accessory minerals, which invariably accompany the diamond in South Africa, in the gravel collected by the large ants, which are so numerous in this part of the country. It lies on the northern slope of the Magaliesberg, near Franspoort, about thirteen miles from Pretoria.

From the three first mentioned mines over 20,000 carats weight of diamonds have been taken. The yield of the fourth has not yet been declared.

In addition to these places diamonds have been discovered in the alluvial gravels of the rivers which rise in their vicinity, and notably on the farm Bynestpoort, which has yielded a large number of stones, many of good quality. Scattered diamonds have been picked up in various other parts of the Transvaal—in the district of Rustenburg, north of Pietersburg, in the Zoutpansberg; they also occur in the auriferous conglomerates at Klerksdorp.

Considering the comparatively short time that has elapsed since the announcement of the first discovery was made public, the pipes already found are conclusive evidence as to the diamond-bearing qualities of the Transvaal, and the wide extent of country in which diamonds have been picked up, or found by chance, augurs favourably for further discoveries.

That the Transvaal will in the early future occupy high rank as a diamond-producing country, is placed beyond the region of doubt.

The following notes on the Pretoria Diamond Fields¹ are taken from the *Standard and Diggers' News*, London edition, April 21, 1899:—

"THE SOUTHERN BELT.

(1.) "*Schuller's Diamond Mines, Ltd.*—Result from washing surface and developing, mostly prospecting operations, 15,000 carats

¹ By Mr. Leo Weinthal, Pretoria.

since a year.¹ Now developing. Capital, £400,000 sterling. Excellent prospects. This is the only mine so far in the Pretoria diamond fields with 'soft' blue ground, 18,000 loads of yellow and blue ground on floors pulverising. Main shaft being sunk to 450 feet. Blue ground proved by drill to over 650 feet.²

(2.) "*Transvaal Diamond Mines, Ltd.* (J. B. Robinson).—On farm 'Montrose portion,' Elandshoek, half hour from Schuller's. Capital, £50,000 sterling. So far only working red surface ground, of which large area. Recovered in five months, with small rotary machine, about 10,000 carats. Quality worth 17s. 6d. per carat. Reported a pipe recently discovered, shaft now being sunk.

(3.) "*Kaalfontein Farm*, adjoining Schuller's, whose No. 2 pipe now being worked so successfully, is cut through by the border line of this farm (see map).—Diamonds of good quality have been picked up by Boer owners recently on surface after heavy rains. Property now being sold, and is to be floated in Paris by influential Anglo-German financiers.

"THE CENTRAL BELT (THE WASH).

(4.) "*Elandsfontein (South)*.—Mineral rights owned by Mr. Werner Jahn of Johannesburg, who has actively prospected same, finding good diamonds from 15s. to 50s. per carat in value.

(5.) "*Leeuwsbaken*.—Mineral rights same owner. Splendid indications, carbons and good garnets and several diamonds found, but so far little prospecting work done.

(6.) "*Byenestpoort*.—Now been actively prospected by Byenestpoort D. M. Syndicate, for a pipe, of which good indications, but not yet located. The syndicate is getting about 200 carats per week from the wash, which is worked with small machine. Over 1500 carats on hand, average value 27s. 6d. per carat, including some half-dozen lovely stones of high value.

(7.) "*Franspoort*.—Belongs to ex-Treasurer-General Boshoff. A large and clearly defined pipe located here, with diamondiferous surface ground, proper yellow and blue ground. The latter not tested yet. Discovery only last month [February 1899]. Property worked by a Johannesburg syndicate.

(7a.) "*Elandshoek (West)*.—Some fifteen good diamonds discovered by working with hand sieves; very little prospecting done.

(8.) "*Kameelfontein (South)*.—The same wash as on Byenestpoort and Elandsfontein (South). Company now forming.

(9.) "*Derdepoort*.—On the portion north of the Magaliesberg the same wash is found. Syndicate now being formed in Pretoria to work same.

¹ Up to the date of the outbreak of war the total output amounted to approximately 10,033 carats from 28,350 loads.

² This was the site of the battle known as Diamond Hill.

"THE NORTHERN BELT (PIPES).

(10.) "*Tweefontein*.—On this farm a discovery of a proper pipe took place a few weeks ago by accident. The ground taken out of a hole, in which dead rinderpest cattle had been buried, has been found to give excellent diamond prospects. The formation is like Schuller's on the top of the hill, and the first washing results from a few loads were about ten diamonds of good quality. In the hands of a Pretoria syndicate.

(11.) "*Roo-de-plaats*.—This farm belongs to Pretorius, Second Raad member. The Government mining prospector, Mr. Franke, located a proper pipe of about 100 yards radius on the banks of the Pienaars River. The surface deposits have evidently been washed away by former heavy floods. A $2\frac{1}{2}$ -carat white stone was picked up by Kaffirs near by quite recently. A 20-carat stone was found ten years ago and sold as a pretty crystal by the Boer owners. The blue ground in the pipe is similar to the very hard blue found in Schuller's first pipe, and which, by excessive tremendous volcanic heat, has been calcined almost to the hardness of rock. Property now being taken over by a Rand syndicate.

"Almost every week new discoveries are reported."

The Schuller mine is so far the most important opened up in the Pretoria district. The following particulars by Mr. A. Cooper-Key embrace late accounts of the mine:—

"There are two large excavations, the east (or old) and the western (or new) mine about 45 feet or 60 feet deep. It is estimated that the extent of the mine is thirty or forty claims (a diamond claim measures 30 feet by 30 feet). In No. 2 (or new) mine a diamond drill hole has been sunk to 510 feet, at which depth blue core was still being brought up. The prepared floors for exposing the ground to the action of the weather extend to about 20 acres, and about 16 acres have been covered with yellow ground, representing nearly 20,000 loads. Washing operations were not carried out owing to the war, but a plant capable of dealing with 300 loads daily has been erected. The cost of washing is estimated at 2s. per load. Yellow ground and surface stuff washed in hand machines have given a yield of about 30 carats per 100 loads. It is stated that 13,000 carats have been recovered. Most of the work done has been paid for by receipts from the sale of diamonds."

Iron.

When the problem of producing suitable coke has been solved, the iron ores which are so abundant both in the

Transvaal and Orange River Colony will be brought into use.

It is doubtful whether any part of the world is so bountifully supplied with this most useful of metals.

When the late Mr. G. W. Stow investigated the mineral resources of the Orange Free State about twenty years ago, he discovered iron in vast quantities near the present town of Vredefort. Since then the Transvaal has been found to contain immense quantities of the same mineral.

These ores consist of three varieties:—1st, The highly magnetic iron ores of the Pyramids and other spots in the area of the red granite north of Pretoria; 2nd, The magnetite beds near Pretoria and other places in the Gatsrand series; 3rd, The iron oxides of the Hospital Hill series.

With regard to the first mentioned, Professor Molengraaf, late State Geologist, states:¹ "Should an iron industry be established at some later date in this country, these deposits of magnetic iron would become of great importance." It occurs in great abundance in the districts of Rustenburg, Pretoria, and Middelburg, where, on account of the highly magnetic power of the ore, a spot where it was plentiful received the name of "Magnet Heights" from the early explorers.

It contains a high percentage of iron, and is comparatively free from phosphoric acid and sulphur.

2nd. The magnetite beds of Pretoria are situated in the lower layers of the geological system named after the capital, but formerly called the Magaliesberg and Gatsrand beds.

The "Pretoria" beds extend into the districts of Middelburg and Lydenburg eastward, and into Rustenburg and Zeerust westward; they also form an important range in the Heidelberg and Potchefstroom districts, known as the Gatsrand. Throughout the whole length of their occurrence they contain a group of rocks interstratified with which there are several layers of magnetite ranging in thickness from 3 to 10 or more feet. The quantity of this ore is inexhaustible. The quality was proved by analysis taken under the super-

¹ See Report of the Minister of Mine of the Z.A.R., 1898, p. 6, State Geologist's report.

vision of the late acting State Mining Engineer, the late Mr. Schmitz Dumont. It was as follows :—

Iron Ore from Pretoria Town Lands.

Fe_2O_3	.	.	.	.	.	67.16
SiO_2	.	.	.	.	.	23.08
Al_2O_3	.	.	.	.	.	5.08
P_2O_5	.	.	.	.	.	.68
SO_3	.	.	.	.	.	.15

In its low percentage of phosphorus and sulphur and high proportion of iron this ore compares favourably with the best known ores of Europe or America. It could be converted into steel by the ordinary process.

The analysis showed that there was a small quantity of gold in this bed of magnetite, one assay yielding nearly 3 dwts. per ton.

Large areas containing this bed of iron ore lie in close proximity to the great coalfields of the Transvaal, and as limestone can also be obtained in almost any part of the country, all the essential elements for the establishment of ironworks are available.

Hitherto the production of good coke has not been successful, owing as much to the want of practical knowledge of the method of treating coal, such as that of this country, as to the quality of the coal itself. This difficulty will be overcome, no doubt, and then the erection of blast-furnaces will follow. The failure of the Natal Iron Company, some years ago, was due to the want of good coking coal in that colony.

3rd. The Hospital Hill series, which lies in the immediate neighbourhood of Johannesburg, and extends for over 200 miles through the districts of Heidelberg, Potchefstroom, Klerksdorp, and in other parts of the colony, contains a limitless supply of red oxide of iron, particularly suitable for iron-smelting. It is low in phosphorus and sulphur, with a high percentage of the metal.

In connection with ironworks, fire resisting clays are an absolute necessity, and here again the Transvaal possesses the necessary mineral products.

The finer sediments of the Dwyka Conglomerate, which occur in such well-developed beds at Vereeniging, Boksburg, and on the East Rand, are peculiarly suitable for the manufacture of firebricks. For years past Messrs. Lewis & Marks have turned out good material for furnace linings made from the clay lying under their coal seams, which has now been identified as the less bouldery layers of the great moraine which, in South African geology, bears the name of Dwyka conglomerate.

Similar beds underlie the Boksburg coal, and they extend irregularly northward to Kaalfontein station on the Pretoria-Johannesburg line, where firebricks were also manufactured.

The State Mining Engineer¹ states :—"There is no doubt that this country offers special opportunities for large iron-works. As regards a market, during the past year the value of imported machinery, iron goods, and railway material was £2,305,575."

Silver.

This metal has been found native in small quantities in the Victoria Regina and Albert silver mines, Pretoria district, and in company with grey copper ore, at "The Willows," about 12 miles eastward of Pretoria. In this mine the assays were particularly high, as much as 5000 oz. per ton of ore being recorded. The "Transvaal" silver mine, where the metal occurred as argentite, in company with galena, was worked for some time, but eventually operations were suspended on account of the difficulty of obtaining suitable coke for reduction purposes.

In the districts of Zeerust and Malmani, as well as in Rustenburg, large deposits of argentiferous galena occur, but their value in silver has not been ascertained up to the present.

Lead.

When the early pioneers of the Transvaal required lead wherewith to cast bullets for their ancient muzzle-loading guns, they proceeded to those parts of the country where

¹ Report, 1898.

lead ore existed, more especially in the neighbourhood of Zeerust, and there they smelted such quantities as they required.

This information reaching Kimberley, induced several of the more venturesome spirits to prospect the land from whence these reports originated. So Messrs. Raymond and Bray opened up the Bray lead mines on the Farm Rhenosterhoek, Zeerust district, and for some years they produced all the lead the country required.

The ore they worked was galena (sulphide of lead), containing up to 20 oz. of silver per ton of ore.

In course of time other deposits of galena were discovered nearer Pretoria, but as the invention of breech-loading rifles did away with the necessity of casting bullets, the industry died out completely.

Lately, as the use of lead was introduced into the gold-saving processes on the Witwatersrand, the demand for this metal increased, and consequently several deposits were opened up near Pretoria. Of these, the Edendale mines produced the greatest amount of lead.

Galena occurs in numerous places in the Transvaal, but principally in the regions where dolomite is the prevailing rock.

It has been worked near Waterval Onder (Moore's Hill), a position most favourable for cheap transport to the coast.

When lead is required for commercial or industrial purposes in such quantities as to encourage the development of the local sources of supply, they will be found sufficient to satisfy all demands.

The following description of the process of smelting galena ore together with gold containing by-products from the gold mines as carried on by the Rand Central Ore Reduction Co. at Johannesburg,¹ is by Mr. A. Cooper-Key:—

“The blast-furnace, which is capable of smelting from ten to twelve tons per twenty-four hours, is of the water-jacketed type. The depth is eighteen feet, and the internal measurement four feet square. Near the top of the furnace is a flue by means of which fumes are taken off through a dust chamber to a smoke-stack. In

¹ *Standard and Diggers' News* (London edition), October 14, 1898.



PHOTO BY BUREAU OF MINE, U.S. DEPT. OF THE INTERIOR

EXTRACTOR HOUSE, ANGELO DRIEFONTEIN GOLD MINES

Here the gold is precipitated from the cyanide solution on to zinc shavings. On some mines the process of electrical deposition on lead is employed

the working of the furnace, galena ore and litharge are fed together with coke and the gold-containing by-products which have been previously combined with various necessary materials and made into bricks.

"At the present time English coke is being used almost exclusively, and the management complains that it is impossible to rely on prompt and regular delivery of the locally made coke, which, when it can be obtained, answers the purpose admirably.

"The consumption of the Rand Central Ore Reduction Company amounts to between 2000 and 3000 bags per month, which in itself would almost warrant one of the coal-mines manufacturing coke regularly and pushing trade in that article.

"The galena ore used comes chiefly from the Pretoria district, and in lesser quantities from Marico (Western Transvaal). It may be remarked that the quantity used varies considerably according to the requirements of the lead market, as it is practicable to add large quantities of galena without affecting the extraction of gold. The products of lead smelting are (a) lead bullion and (b) slag. Originally the by-product bricks assay about 15 oz. per ton of gold, and give a slag carrying only about 1 dwt. of gold per ton. Naturally the value of the lead bullion depends on the quantity of galena used, but it is approximately from 30 to 40 oz. per ton. This low-grade bullion is treated by the Park process. Under this system zinc is added to the bullion which forms a crust carrying the gold. This gold crust is retorted and cupelled. The lead is passed through a softening furnace yielding soft marketable lead. A new Park's plant, superseding the old, which was found too small for the company's requirements, comprised two crucibles holding 30 tons.

"The market lead obtained by the softening process is either sold direct for pipe jointing, &c., or rolled into sheets and foil, for use in the Siemens-Halske process of electrical deposition, of which the Rand Central Company is the promoter.

"A lead rolling plant comprises three pairs of English rolls. There are also pipe-making machines capable of turning out lead pipe varying from half an inch to eight inches in diameter. Pipes of the larger dimension are used for lining iron pump-pipes, protecting them against acidity in the water. This acidity has caused great inconvenience and expense at several mines, notably at the Durban Roodepoort Deep."

Copper.

The great number of ancient workings found scattered about the Transvaal were principally made by the early native tribes in order to obtain copper from which to manufacture ornaments. The most extensive of these workings were at the Palabora, in the Zoutpansberg district, and at

Abjaterskop in the district of Zeerust, though others of lesser extent are to be found in many other places, especially in the district of Rustenburg.

Recently such mines as the "Albert Silver" and the Willows were worked for their silver contents, though in reality they contained copper ores. Tetrahedrite (Fahlerz or grey copper ore), containing a high percentage of silver, was the prevailing ore, though copper carbonates occurred near the surface, and chalcopyrite (sulphide of copper) at the lower levels.

The copper contents of the mineral averaged about 10 per cent. for unsorted ore. The veins, which are true fissures, were numerous on the Willows, and extended throughout the length of the property and into several farms beyond.

Difficulty of transport, the want of good coke, and above all the more profitable openings for capital in the development of the Witwatersrand Goldfield, militated against the working of either copper or any other mineral during the last decade.

Several veins of copper ore were discovered in the district of Vryheid in the south-eastern portion of the Transvaal, and of these the most valuable are on the farm Goudhoek, No. 498, where several parallel veins occur, some of them carrying native copper, the others chalcopyrite in fair quantity. But little work has been done on this property.

The district of Rustenburg is rich in copper, but up to date little prospecting has been done, and its mineral resources are but little known.

Finds of copper ore were reported lately from the neighbourhood of Krugersdorp, and near Potchefstroom; these, however, were not followed up owing to the outbreak of hostilities.

Judging from the numerous occurrences of copper ore, and from the extent of the old workings, there is every probability of copper being discovered in such quantities as to warrant the erection of smelting works in the country.

The ancient workings have never been explored; those

at Abjaterskop are of great extent, and it is probable that a large quantity of ore has remained unworked in them.

In Namaqualand copper occurs in the granite and gneiss. Hitherto these rocks have not been explored for copper in the Transvaal, though it is probable that the ores may exist here, as they do there. The same geological formation which contains these gneissic rocks in Namaqualand, exists in the Transvaal.

Zinc.

On the farm Witkop, in the district of Zeerust, there is a most interesting place, which yields a great variety of minerals—lead, cinnabar, and zinc being the principal. Covering less than an acre in surface area, and circular in form, this spot most resembles an ancient volcanic crater, though upon closer investigation the mineral lode is found to dip eastward under the dolomitic rocks in which it occurs. So far as it is possible to judge from the insignificant workings, the zinc ore (blende) is in great quantity, and possesses a high percentage of zinc.

Unfortunately the farm belongs to one who does not need to delve in the earth for a living, and consequently the mineral wealth existing here must remain undeveloped, because its owner has no inclination to work the mine himself, and will not allow any one else to do so.

Specimens of zinc have been brought from the district of Rustenburg, where the mineral is said to exist in quantity.

Tin.

Cassiterite (tin oxide) was discovered in Swaziland some years ago. It occurred there in alluvial gravels, evidently derived from the neighbouring hill ranges. Though the mineral does not exist in quantities sufficient to warrant the formation of highly capitalised companies, it is admitted by those competent to judge that there is a large field wherein individual workers can do well at tin sluicing. It is self-evident that the mineral which now lies intermingled with the debris formed from the disintegration of the rocks in

the vicinity must have been derived from some system of veins, rich in cassiterite, contained in the country rock. Some insignificant veins have been discovered at Emba-baan, in Swaziland, but it is not probable that the large amount of alluvial tin found in the gravels was derived from so limited a source. There is a good field for prospectors both in Swaziland and in the streams which flow through the Waterberg, as well as in the gravels of the Olifant and Salons River, where the mineral has been found. A shipment of Swaziland tin was sold in England in 1899 for £83, 15s. 6d. per ton.

Cobalt.

This mineral ranks among the early discoveries in the Transvaal. A mine was opened on the farm "Kruisriver," near Middelburg, in 1885 by the late Mr. Percy Whitehead, and from this source a large quantity of cobalt was exported. Though some of the ore realised the sum of £405 per ton, and the average price obtained was £158 per ton, mining operations were suspended, owing to the overstocking of the market for this product. As other uses for cobalt have lately been discovered, it is probable that the Transvaal sources of supply will come to the fore again. In addition to the occurrence of cobalt on Kruisriver, it has also been discovered near Balmoral, and at several places in the Rustenburg district. The ore contains a high percentage of arsenic.

Platinum.

The well-known Black Reef series, from which gold was obtained in large quantities, has lately been found to be rich in platinum in certain spots, notably in the district of Klerksdorp, on the town commonage, as well as farther westward towards Buffelsdoorns. It occurs in fine grains in the gold-bearing conglomerate, frequently as much as $1\frac{1}{2}$ ounces per ton of ore.

No attempt has yet been made to develop this mineral in any of the places where it has been found; the little collected at the gold-mills having been regarded more as a

curiosity than from an economic point of view. There is, however, little doubt but that a thorough search would prove the quantity to be well worth working in certain parts, though perhaps not along the whole extent of the Black Reef.

Osmium and iridium are also found in connection with the platinum on this line of reef.

Mercury.

Cinnabar, the most abundant source from which mercury is obtained, is found in a well-defined bed interstratified in the "Barberton" formation at the Lomati River, east of Barberton. Workings have proved the continuity of the ore to the depth attained, about fifty feet; and as there is no evidence of its terminating at this level, and as it is found outcropping for a distance of over 600 yards on the surface, and maintaining an average width of about $2\frac{1}{2}$ feet, it may be regarded as a permanent lode, and as such will no doubt be made to add its contribution to the wealth of the country. At present it is lying dormant owing to the difficulty experienced during the past in inducing capital to be placed in any other venture than gold. Assays made of ore from this vein have proved it to be rich in mercury; in fact, the percentage is far greater than that of the mines of Spain or California. In company with other metals cinnabar is found at Witkopje, a farm near Zeerust.

Antimony.

Mr. Wilson-Moore read a paper at one of the early meetings of the Geological Society of South Africa (see vol. i. No. 3, p. 56, of the Transactions), wherein he demonstrated that enormous quantities of antimony (stibnite) existed in the Murchison Range. Though there is no use at present for any large quantity of antimony, it may at some future date enter into more general demand, and be employed for purposes unknown at present. The antimony at the Murchison Range contains a high percentage of gold; said to be 15 dwts. per ton. This mineral also occurs at the Komati, near Steynsdorp.

Bismuth.

Rustenburg district has supplied samples of bismuth, but whether there is any quantity of the mineral is unknown.

Nickel.

Also from Rustenburg, but quantity and value of ore unknown.

Uranium.

Pitchblend containing a high percentage of uranium was discovered on a farm near the Willows Mine, Pretoria, but the find was not developed.

Magnesite (Carbonate of Magnesia),

which forms a fire-resisting material superior to any other, occurs in deposits of great extent at Kaap Muiden Station, on the Delagoa Bay line.

Graphite,

suitable for the manufacture of crucibles, exists in immense quantity in the Magaliesberg, near Rustenburg.

Gannister,

moulding sand, and other necessities for the development of the iron industry are abundant throughout the country.

Manganese

is abundant wherever the dolomite formation, which occupies about one-fifth of the area of the Transvaal, has been subjected to disintegration by atmospheric influences.

Cement.

Minerals suitable for the manufacture of first-rate cement are plentiful, and cement works have been in operation near

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Pretoria for several years, turning out a large quantity of cement, which was used locally, in place of the imported article, with which it compared favourably.

Magnesite

cement is used for the manufacture of building materials, especially ornamental portions of structures. The beds of this mineral at Kaap Muiden have been tested and found of superior quality, while the quantity of the mineral is very great.

Building Stones

of great variety exist almost everywhere. The coal measure sandstones yield an excellent "freestone," from which several of the finest buildings in Johannesburg and Pretoria have been constructed; for instance, the Bank of Africa, Commissioner Street, Johannesburg, and Lewis & Marks' Buildings, Pretoria. The vogesite dykes at Wonderfontein have been employed for purposes where great durability is required, such as the steps to the Post Office, Johannesburg, and other public buildings. This rock can be obtained in great quantities near Johannesburg. It would form a most ornamental variety of rock, suitable for columns or monumental work, if properly polished. It resembles the red varieties of granite employed for these purposes in Europe. Highly ornamental serpentines exist at Pretoria, but further than for experimental purposes these have not yet been used. There is a thick bed of fine-grained crystalline limestone near Belfast, which has been tested for lithographic purposes, and found equal to that imported from Germany. Many layers in this bed are beautifully streaked, and would form most ornamental material for mantelpieces, or other similar uses.

Mica,

now so largely required for electrical purposes, has hitherto not been discovered of such quality as to warrant development, but at the same time the specimens from the northern districts are encouraging, and invite more careful investigation of the localities where they are found.

Impure Opal

exists in great quantities in connection with the great complex of rocks which lie north of the Magaliesberg. Fairly good specimens of noble opal have been discovered near Pretoria. It is highly probable that with diligent prospecting, layers suitable for jewellery purposes would be located.

Rubies

have been reported from the Zoutpansberg, but their occurrence is not definitely ascertained yet.

Turquoise

has also been reported from the same locality, but the discovery requires confirmation.

Abrasive Minerals.

Corundum has been discovered in Swaziland and on the eastern slopes of the Drakensberg, near Lydenburg, also occurring in crystals in an igneous rock near Vredefort, in the Orange River Colony.

Keizelguhr,

suitable for the manufacture of dynamite, exists in quantity near Amsterdam. This occurrence is fully described in the report of the State Geologist for 1898.

Chromite

is abundant at De Kroon, Rustenburg, and other places in the neighbourhood.

Æschynite and Monazite,

containing a high percentage of the mineral thorium, which is employed for the manufacture of incandescent mantles for gas lamps, is found in the streams in which the tinstone occurs at Embabaan, Swaziland ; where also scheelit (tungstate of lime) has also been discovered.

GENERAL.

From the foregoing pages it will be observed that the Transvaal is an excellent field for prospecting operations.

The variety of minerals, of which those mentioned do not by any means complete the list, and the great extent of country in which they occur, places it in the foremost rank as a mineral country.

Hitherto the proprietorship of the land has to a considerable extent prevented the proper development of its mineral resources. The owners of large areas who were non-resident were averse to allowing their properties to be prospected, they reserving the mineral wealth for future development, by means of capital raised for the purpose. The individual prospector stood no chance under these circumstances. When the whole mineral wealth of the country in general is nationalised, and every unproclaimed farm is thrown open to the public, then there will be some prospect of employment for those who are skilled in searching for minerals.

The resident farm owner was not, as a rule, a stumbling-block to the prospector. He could be dealt with. But the non-resident, whether represented by a single individual or a public company, would not allow prospecting at any price.

Thus many portions of the Transvaal are entirely unprospected at present. The districts of Rustenburg and Waterberg are, for the greater part, unprospected in the proper sense of the term, yet they are undoubtedly rich in mineral wealth. Pilands Berg especially is a particularly favourable locality for several of the more valuable minerals.

The diamond mines of the Transvaal are in their infant state. Barely three years have elapsed since the announcement was made in the local Geological Society that the Transvaal was to be included in the diamond-bearing area of South Africa. Yet four true diamond-bearing pipes have been discovered in that time, and when the great extent of country is taken into consideration over which diamonds have been picked up, it will be readily admitted by those who are not prejudiced against the country, that there is a good prospect of finding many other pipes. Though granting that some

of the diamonds found on the surface may be "emigrants" from worked mines, yet when a number of stones are found within a limited area, as at the "De Kroon," they must have been derived from some local source not far distant.

Nor are all the gold occurrences properly known at present. The map and sections opposite pp. 10 and 42 are evidences to the contrary. Parts of the country which are known to contain the extensions of the auriferous conglomerates have not been exhausted so far as their gold contents are concerned. Large areas have been completely ignored, and others passed over after a most cursory examination of their value.

Large portions of the northern districts are practically unknown, except to the hunter or trader. What little prospecting has been done was generally under the supervision of unskilled persons. Those days are happily past when any one who was too lazy to work at a settled trade or profession could induce some of his acquaintances to fit him out in a prospecting equipment and send him forth in the expectations of his finding a "Sheba." The prospector of to-day must have more than a rudimentary knowledge of mineralogy, or he will make but little progress.

Though by no means exhausting the interesting subject with which this chapter deals, enough has been written to show that there are many minerals which await development in both the newly acquired territories, and at the same time there is a great field open for capital in further developing those which are already known to exist, and to open up parts of the country as yet but little prospected.

[The geological survey of the Transvaal, which was under the general direction of Dr. Molengraaf, has made slow progress in consequence of the small amount of technical assistance granted by the late Government. As a matter of fact, too much work fell on the shoulders of the State Geologist. About 5000 South African specimens have been collected for the State Museum at Pretoria. A few districts have been partially surveyed. Dr. Molengraaf considered that with sufficient assistance "the whole State could be thoroughly mapped out geologically in the course of ten years or so. The maps would rather be sketch maps than closely detailed ones. A commencement of the geological survey has been made, Pretoria district being the first area selected."

The importance of a proper geological survey of the new colonies cannot be over-estimated, and it is to be hoped that energetic and adequate financial support will be forthcoming for this important branch of State service. Dr. Molengraaf has done most valuable work during the short period of his appointment.—W. B.]

CHAPTER X

THE DYNAMITE MONOPOLY

ONE of the principal grievances of the Mines against the late Government was the dynamite monopoly. As a fact, the grant and persistent maintenance of this iniquitous monopoly in the face of continual opposition from the inhabitants, both Uitlander and Boer, was only on a piece with the general policy of the Transvaal Government; that was, devising taxes on the efforts of the people, not so much for the benefit of the State as for the enrichment of individual speculators who could afford to pay the various members of the Government for the benefits they secured to them. The terms of the first contract made it clear that the concessionaire was bound to manufacture dynamite and other explosives in the State, and as far as possible he was to obtain the raw material from supplies available in the Transvaal itself. This concession was grossly abused, and the so-called factory was merely a place where *guhr impregné* (dynamite) was received from abroad and made up into suitable cartridges. All this dynamite was imported free of duty; the concessionaires making a profit of from £2 to £3 a case. The opposition to the monopoly grew so strong, that an inquiry was made by the Volksraad into the matter, and as a result the concession was cancelled, it being evident that the Government had been grossly deceived. Shortly afterwards the iniquity was re-established. This time it was called a State monopoly, and the Government soon gave away its rights of working the same, and the greater part of the profits accruing. A company was formed, and blocks of shares were given to various partners and persons interested in the old concession. Full details of the flotation were brought out in the evidence before the Concessions Commission in October 1900. Nobels, of Glasgow and Hamburg, obtained a considerable interest in

the new monopoly. Other conditions of the flotation were, that the several parties who had helped to obtain the agency were to receive so much on every case sold.

Messrs. Lewis & Marks received 2s. a case.

Mr. Lippert received 6s. a case for fifteen years.

„ received 2s. a case for three years.

The Government itself received 5s. a case.

The Company formed to work the agency was known as the South African Explosives Company. The capitalisation of the Company was £450,000, distributed as follows¹ :—

Shares.
£220,000 to provide cash working capital.
25,000 to Mr. Lippert.
182,500 to the French Company as compensation for the cancellation of the old contract.
22,500 to Dr. Gobert "for services rendered."
£450,000

By the terms of the contract conferring the agency the Company was bound to erect and complete a factory capable of supplying all the requirements of the country within two and a half years. This period terminated on the 24th April 1896. The Company failed to complete the factory within the stipulated time, the factory being only completed on 22nd October 1896. Further, the factory was incapable of supplying the requirements of the mines, and it was estimated that 290,000 cases would have to be imported by the Company for the years 1897 and 1898. The Volksraad Dynamite Commission calculated that the profit on these 290,000 cases would be no less than £580,000, being at the rate of £2 per case.

¹ The following is from an account of the evidence given before the Concessions Commission at Pretoria in the *Morning Post* of October 2, 1900 :—"The books and documents of the Company, which were impounded during the British military occupation of Pretoria, had been carefully examined by accountants, and their report showed that the Company had deliberately written off enormous sums in order to reduce the Government share in the profits. The books further showed that the participants in the profits up to date were as follows : Lippert and Dynamite Agency Company, £320,000 ; Company Shareholders, £292,000 ; Transvaal Government, £264,000 ; Lewis & Marks, £60,000 ; Directors in Europe, £48,000 ; Bonuses and Fees for Vorstman of Pretoria, £38,000.

"The total reserve and undivided profits to the end of December last were shown to be respectively £826,000 and £418,000."

On evidence given, the Industrial Commission, appointed by the Government to report on the grievances of the mining community, had previously advised the Government to cancel the concession, and to allow free trade in explosives, subject to a duty of 20s. per case.

The questions of breach of contract on the part of the Company and the right of the Government to cancel the concession were referred to several of the leading counsel in South Africa. Among those consulted were Mr. W. P. Schreiner (late Prime Minister of Cape Colony), Dr. F. W. Reitz (late State Secretary Z.A.R.), Advocates Curlewis and Smuts (late State Attorney Z.A.R.). With the exception of that of Mr. Smuts, all the opinions were to the effect that cancellation was within the rights of the Government.

The Government did not accept the recommendation of the Industrial Commission, but referred it, with the other matters reported on, to another Commission, the members of which were Messrs. A. D. Wolmarans, F. G. Wolmarans, C. Tosen, Barend Vorster, and Louis Botha. This Commission recommended the Government not to cancel the monopoly, but to accept instead the offer which the Company had made of a reduction of 5s. per case, and besides to waive its rights to the 5s. accruing to the State under the contract, making a total reduction of 10s. The recommendations were adopted. Barend Vorster and Louis Botha noted their objection to some articles of the report. This brought the price of dynamite down to 75s., and blasting gelatine to 97s. 6d. In 1899 the British Government took the matter up on the ground that the dynamite monopoly constituted a breach of the London Convention, in that it prevented British subjects from having equal rights with the subjects of other nations to trade in dynamite, or any other commodity. In face of this the Government attempted to get the Volksraad to prolong the period of the monopoly by another fifteen years. The Volksraad, however, was against this extension.

An attempt was then made by Mr. Lippert to make terms with the mines. The story is fully told in Mr. Fitzpatrick's book, "The Transvaal from Within." Nomi-

nally Mr. Lippert opened negotiations for the purpose of obtaining a settlement of all grievances then being complained of by the Uitlander community. But it soon appeared that Mr. Lippert's efforts were principally directed towards keeping the dynamite monopoly alive. Mr. Fitzpatrick says "that it was known Lippert would receive the further sum of £150,000 if the monopoly remained uncanceled for five years." He goes on to explain the offer which had been made by the Chamber of Mines :—

"The Government had, in fact, been placed in a very awkward position. One of the excuses for not expropriating the monopoly had been, that the State had not been successful in raising a loan. In order to deal with this objection, the Chamber of Mines had, in the month of February 1899, made an offer, guaranteed by all the principal firms on the Rand, to provide the sum of £600,000 to compensate the monopolists for their actual expenditure up to date upon buildings, plant, machinery, &c., so that there should be no semblance of injustice in the treatment meted out to them. The conditions of the offer were, that the dynamite monopoly should be cancelled, and importation of explosives permitted under an import duty, which would give the State a very large revenue at once, and which in the course of a few years would provide a sinking fund sufficient to extinguish the loan of £600,000. The offer was so favourable to the State that it placed the Government in a quandary. The attitude of the Volksraad, too, was distinctly hostile to the dynamite monopoly; and on the top of all were the representations of the Imperial Government upon the subject. It became necessary to do something to save the threatened 'corner-stone;' hence the peace negotiations between the Government and the capitalists."

Nothing resulted from these negotiations. Accordingly when the War broke out the dynamite monopoly was still in existence, but various valid and legal grounds for its cancellation appear to have been proved, and perhaps another session of the Volksraad would have dealt with the question honestly, and it would have gone. The Concessions Commission has advised that the Company should have no advantages in competition other than those secured by first occupation of the field of industry. The South African Explosives Company (the Concessionaire) has meanwhile made an appreciable reduction in the price of explosives.

The following statements from the Chamber of Mines' report, 1889, shows the facts in a comparative form :—

Dynamite is delivered at the following places at prices as under :—

	Miles from Coast Port.	Price of No. 1 Dynamite delivered at Mine.
Sheba Company, Barberton	123	*89s. od.
Mines of Central Witwatersrand.	396	*76s. od.
De Beers Company, Kimberley ¹	485	37s. od.

* 2s. 6d. per case, payable by agent to Government.

It may be stated that the factory as now completed is capable of dealing with something over 200,000 cases per annum, and perhaps the factory may be taken over at cost valuation. This seems more than the Company deserves. Evidence was given before the Concessions Commission at Cape Town to the effect that the factory was built out of profits illegally made.

The rate of consumption during 1899 was 300,000 cases per annum. The Chamber of Mines report states that dynamite No. 1 can be delivered at 45s. per case, and that in the same proportion, blasting gelatine could be laid down at 67s. 6d. The best policy that the new Government can adopt appears to be to allow free importation of dynamite, subject to a duty of 5s. per case. The prices in Johannesburg would then be 50s. and 72s. 6d.² respectively for dynamite and blasting gelatine, or a further reduction to the mines of 25s. per case from the old scale of prices. A consumption of 350,000 cases per annum may be expected in the immediate future, and the 5s. duty would bring in £87,500 of revenue to the Government to begin with. This policy would mean a material reduction of working costs (about £425,000 a year immediately) on the mines and a reliable and growing source of income for the Government.

¹ "Nobel's Trust undertake to deliver dynamite No. 1 on the works of the De Beers Company at Kimberley at 37s. 6d. per case plus the duty of 12s. 6d. per case imposed by the Cape Government. The consumption of explosives by the De Beers Company is 15,000 cases per annum."

"The very people who supply us at 75s. offered to deliver dynamite here at 40s. in bond before they obtained the monopoly, and are now supplying the De Beers Company at 50s., out of which the Cape Government takes 12s. 6d. for duty, leaving 37s. 6d. as the price received by the vendors in Kimberley."

² Probably less for blasting gelatine.

CHAPTER XI

THE LAND

It is an axiom that the maintained prosperity of a country lies not so much in its mineral wealth, which may become exhausted, as in its husbandry and in the capacity of its industrial resources. The tillage of the soil and the prosperity which arises from industrial effort, may be said to be in their infancy in the Transvaal.

In inquiring into its agricultural resources it must be remembered that the country is young in experience, and that its purchasing power was small until the Rand, with its teeming life and great demands, came into existence and took all that the farmers liked to send to its markets. It is a new Transvaal which has come into being with the new century—a Transvaal which can support a pastoral and agricultural population of the best type, not afraid of work, and with a nobler aim in life than living from hand to mouth, looking on while the gold-mining world at its very doors calls for food and calls in vain.

Agriculture in the Transvaal has had its share of simulated protection. This did the Boers no good, because such protection failed to stimulate them to greater exertion. All that the country, with an assured mineral industry, lacks to become a most prosperous corn and stock raising country is a truly industrious farming population and the fostering care of good government.

With proper government and the stable support of the Empire, no one knowing the capabilities and resources of the land can doubt that the result of its present cleansing by fire and sword will be the permanent establishment of its prosperity on other bases besides that of gold-mining. The mineral wealth must be looked upon as a valuable aid,

and the opportunities it offers of unlimited markets must be fully taken advantage of to nurse and sustain the great permanent industries of the country, which will exist after the gold has gone.

The agricultural and kindred resources of the Transvaal are very great. The immense rolling plains of the high veld are capable of raising millions of bushels of cereals. There are miles upon miles where the steam plough can prepare the way for almost limitless areas of wheat, mealies, Kaffir corn, and oat hay. Mealies grow almost anywhere without irrigation, and the same may be said of Kaffir corn or millet.

The country offers great opportunities for stock-farming, but it also is as yet a primitive industry. As did his forefathers with their sheep and cattle, so does the present-day Boer with his. He makes no winter shelters, but at the approach of winter on the high veld, when the grass begins to wither and the keen night winds leave the animals shivering and starving until the rising of the sun warms the air, the Boer and his family set off to the low country—the northern bush veld, the warm valleys of the Kaap gold-fields, and the sheltered lowlands of the Swazi country—with his flocks and herds, and there he abides until the spring-time. Then he travels back to his high veld farm, where his stock, impoverished by the long journey, soon regain strength and condition on the rich grass and bracing air. Winter shelters and the liberal growth of silage stuff would save all these weary travels and the consequent waste in lambs too feeble to face the journey. They have done something in the Free State, but little or nothing in the Transvaal, to stock farm on a common-sense basis. Boer methods, both as regards agriculture and stock-raising, although possessing certain advantages in a new country, have been primitive and unprogressive.

When the hardy Voortrekker¹ first crossed the Vaal he might well have exclaimed, like the Voortrekkers of the Bible, "This is a goodly land, flowing with milk and honey." Accustomed as he had been to see only the great grey plains of the arid Karoo, his eye had found rest when crossing the

¹ Voortrekker = pioneer.

grassy expanse of the Free State ; but when he came to the Transvaal he entered a land truly with verdure clad, a water rich country diversified with sweeping valleys and ridges, great downs rising in gentle billowy swells to the summit of the high veld—a great natural park, with clumps of mimosa here and there, growing thickest near the water-courses. Instead of the dried-up streams of the Karoo or the muddy ditches of the Free State, here were rills and rivers of water of purest crystal, their sources in many cases being veritable rivers flowing out of the rocks, bubbling up sweet and pure, water which quenched the thirst and gratified the eye. The rivers, strooms, spruits, and fonteins of the Transvaal are all *mooi*, *sterk*, *schoon*, and *wonderlyk*—beautiful rivers, strong streams, fair rivulets, and wonderful fountains ; these are the terms the Voortrekker applied to the waters of the Transvaal, nor do their names belie them.

In order to convey a correct understanding of the water supply of the country it will be necessary to describe briefly one of its chief natural features.

The elevated uplands of the Witwatersrand may be said to be the backbone of the country in more senses than one. Its elevation is from 4500 to 6000 feet above sea level. It runs approximately east and west, and its highest ridge may be said to be at an average distance of sixty miles from the southern boundary of the colony. On this great ridge most of the rivers of the country take their rise. It has special geological features, which make it an immense natural reservoir for receiving and holding a large percentage of the rainfall. The average rainfall on the elevated Rand is about 28 inches per annum. The water-holding capacity is chiefly due to the existence of the magnesian limestone rock or dolomite, which occupies large areas. This rock is known by the Boers by the name of Oliphants Klip (Elephant's Rock), on account of the weathered surface bearing a marked resemblance to the hide of an elephant. It abounds in caves and cavities, and is consequently like a huge sponge which retains the water and allows it gradually to escape and overflow at the numerous eyes or fountains which form the sources of the rivers. It supplies the country with perennial

streams of water. The discovery of the economic importance of this rock is greatly due to Mr. D. Draper, F.G.S., who pointed out its capabilities, and on whose advice its stores were requisitioned for the water supply of Johannesburg. This dolomite formation runs along the Witwatersberg between Pretoria and Johannesburg and westwards for a distance of nearly two hundred miles to Malmani. As it occurs at a high elevation, the streams which take their rise along the flanks can be utilised to water the lower grounds in the Pretoria, Rustenburg, and Marico valleys. To this rock, which covers about one-fifth of the land surface of the Transvaal, Pretoria owes its magnificent water supply.

An extensive branch of the same formation lies south of the Witwatersrand, and, although in not such an elevated position, it also serves a similar purpose for all the lower country between it and the Vaal river.

Eastwards of Johannesburg this dolomite is covered by the more recent coal-bearing formations, but it doubtless exists at a depth and has its reservoirs full of water, because the rivers arising there are equally strong and permanent. All the streams rising on the southern side of the high veldt watershed, that is, the Witwatersrand and its eastern and western continuations, fall into the Vaal. The principal streams are the Makwassiespruit in the west, the Schoonspruit, the Mooi River, the Klip River, and Blesbokspruit, and the head waters of the Vaal itself. These are carried to the Atlantic Ocean. Those rising on the northern side of the watershed flow into the Komati, Olifants, and Crocodile Rivers. Beginning at the west the chief streams are the Groot and Klein Marico, Hex River, Magalies River, Crocodile River, Aapies River, Pienaars River, Bronkerspruit and the Olifants River, and Komati, and their head waters. Farther north the rivers take their rise similarly for the most part in the same dolomite rocks which are found on the western slopes of the Drakensberg in the Lydenburg district. The western portion of the northern country drains into the Crocodile and the eastern into the Olifants Rivers. It will be seen, then, that the river systems of the Transvaal are

fed at their sources from perennial supplies of water, and it is seldom they are found dry.

When they first arrived the Boers soon laid out lands along the banks of the rivers, and they constructed water furrows which converted portions of the rich meadow lands into gardens, producing food more than plenty for all then in the land. Unfortunately afterwards they stopped, as if their energy were exhausted. The cattle grazed on the adjoining downs and grew fat. The horses thrived and the people lived their lives in an arcadia of plenty modelled on lines of their own. But an arcadia not always peaceful, be it understood.

The Mooi River and the Schoonspruit were among the first to be settled, and the historic town of Potchefstroom became the capital of the country.

Farther north after the watershed of the Witwatersrand—the watershed of the Atlantic and Indian oceans—was passed, another country of different character and greater beauty from that of the high veld was discovered. Water in plenty, soil more fertile, trees in greater number, and climate warmer.

Where Pretoria now stands was an ideal place for settlement, a beautiful stream, its source screened by a clump of mimosa trees, welled out from the rocks of the Witwatersberg and flowed down the valley to join another in the next valley from the same water-giving rocks. Here first a laager and then a town was formed. The water was led over the land, and to-day the result is leafy Pretoria. Its streets with rivulets of water running along their sides and its gardens stretching wide over the land on both sides of the stream. Gardens yielding every year extraordinary crops of vegetables, grain, and fruit. A morgen of land is now worth from £50 to £200. Eastwards and westwards stretches the valley in which Pretoria lies. It extends for a length of a hundred miles, and every few miles it is crossed by a stream of water flowing from the same natural reservoirs which supply the fountains of Pretoria.

Immediately to the north there is another valley stretching along the slopes of the Magaliesberg westwards to

Rustenburg and on still farther west to Zeerust in Marico. Throughout this district the soil is composed of deep red loam¹ containing nitrate of potash, with rich black alluvial humus along the rivers. Wheat-growing, tobacco-growing, fruit-growing of inexhaustible fertility. Eastwards the high veld merges more quickly into the low country and the soil is not so fertile.

The stretch of country 50 miles wide and 200 miles long between the high veld and the bush veld make up an area of 10,000 square miles of country with soil of great richness. All it requires is to have the abundant supply of water led on to its surface. This is the country of Pretoria, Rustenburg, and Zeerust. Farther north is the bush veld, useful for affording winter pasturage, but not so healthy.

Beyond the bush veld are the sub-tropical regions of Waterberg and Zoutpansberg. The elevated portions of these, that is, those areas 3000 feet or more above sea level, may be termed healthy, although not so suitable for Europeans as the high veld of the Southern Transvaal. The soil is extremely fertile, and suitable for the growing of tea, coffee, cotton, sugar, and other tropical products. Cattle thrive on the uplands, but on the lowlands, except in winter, they are apt to die. Horse-sickness also is a great drawback. One party of the old Voortrekkers penetrated right through the country in 1840, and after terrible privations through fever and sickness they returned southwards through the Lydenburg district. At one village, named Origstad, in a valley north of the town of Lydenburg, they lost nearly half of their number by fever. They then trekked south, and founded the town of Lydenburg on the healthy highlands forming the western slopes of the Drakensberg.

Offshoots from this community went southwards, keeping on the high lands of the Drakensberg, and, leaving the valleys with the fever on their left, they settled in the Ermelo, Standerton, and Wakkerstroom districts, the country where the head waters of the Vaal and other rivers take their rise. This is one of the finest agricultural and stock-raising dis-

¹ This red loam is usually from ten to fifty feet deep. It absorbs the water readily and slowly gives it back to the roots of the plants.

tricts of the Transvaal. The elevation above the sea level is from 4000 to 6000 feet. Sheep do well, as also horses and cattle. The farms have a prosperous air. The people are hardy, strong, and more active than the inhabitants of the lower lying districts. It would be difficult to adequately describe the magnificent vigour-producing climate of the Transvaal high veld.

Having given this brief description of the country, and noted its good characteristics, a few words must be said about the drawbacks.

In the high veld regions, although grain can be grown in large quantities, agriculture is not always successful; wheat and oats are apt to suffer from rust. Locusts and hailstorms sometimes ruin several successive crops, so that farmers should have other resources besides these.

The plague of locusts, which has been serious in South Africa for nearly ten years, requires energetic measures. Other countries have found means for coping with it. Notably in Cyprus and in the Argentine it has been almost completely stamped out. There are various methods of destroying the locusts: collecting the eggs; propagating a fungus which kills the young grubs; breeding a fly which deposits its eggs on the neck of the locust, which becomes for a time the living host of the resultant maggot, and dies after it has fattened the unwelcome visitor with its substance. The cheapest and best method is that of digging trenches across the path of a swarm when in the hopping stage, and fixing on the far side wall a barrier two or three feet high, slightly inclined over the trench. The barrier may be galvanised iron, calico, or any cheap and handy material. The locusts only seek to go forward in one direction, and when they go down into the trench and perhaps up the other side they come to the barrier and fall back; and so they go on making further ineffectual attempts to proceed. As the swarm comes on the trench gradually gets filled, when countless millions may be speedily killed. The late Free State Government adopted the system, and supplied galvanised iron to the Boers for the purpose of carrying it out on the understanding that a combined effort should be made, and when a swarm came

along the Boers should at once try to destroy it ; but the only result was that each Boer fixed up a barrier round his own garden or cultivated lands, and thus saved his own crop, but allowed the swarms to traverse his veld unmolested. Regulations should be framed and made compulsory, and the effort to clear the country of locusts should, by arrangement with the other colonies, be made general over all South Africa.

Maize is usually a safe crop ; it can be grown without irrigation and consequently at little expense, and if the crop is destroyed the actual outlay lost is not so great. The farmer on the high veld must depend to some extent on his live stock to pull him through bad years. Again, in some places the soil although deep is poor in plant food, and after a year or two, if not manured, it does not yield abundantly. In these districts care has to be exercised in the selection of suitable land, of which there is no lack, but it is to a great extent held by the large owners, and is at present unavailable for the small cultivator except on very difficult and even unfair conditions—the conditions allowed the bywoner.

Although the high veld is favourable for all kinds of stock, rinderpest and lung-sickness, or pleuro-pneumonia, have played havoc with the cattle in past years, and horse-sickness sometimes breaks out with great virulence. This disease is peculiar to South Africa. It is very sudden in its development, and most frequently results fatally. The horse may for a day or two have appeared dull and heavy, and a few hours before death he begins to have difficulty in breathing. This is owing to the presence of serum in the lungs. It appears that the tissues are affected in such a manner that the serum escapes through the walls of the blood-vessels. The horse tries to clear his lungs, and finally dies of suffocation, after having blown out quantities of serum in the form of a white froth. Professor Wallace, in "Farming Industries of Cape Colony," p. 319, a book which intending agricultural settlers will find of the greatest value, says that the disease is due to an organism present in the blood of the horse. He states that Dr. Edington, the bacteriologist to the Cape Government, has pronounced the organism to be "one of the filamentous fungi

which, under suitable conditions of heat and moisture, grows in the veld, but whether in water, in the soil itself, or as a parasite, must be left for future observation to ascertain."

On the western portion of the high veld mixed farming may be recommended, and good heed must be given to past experience. The advice of the Boers should be listened to. In the favoured valleys where the soil is rich there is not so much to fear, and these are the places which should be set open to enterprise.

In the fertile middle veld, comprising the Pretoria, Rustenburg, and Marico districts, the difficulties are less; the soil being extremely good, the crops may be expected with confidence to be of abundant yield. This district is not so good, either for horses or cattle, on account of the endemic diseases being more virulent. Sheep will not thrive here.

Farther north, in Zoutpansberg and Waterberg, while crops thrive on account of the fine soil, and cattle do well as a rule, horses may be said to thrive only in winter; when summer comes, and they are not kept under cover at night, a large percentage of them die. The healthiest district for stock is undoubtedly the eastern portion of the high veld, Ermelo, Bethal, Standerton, and Wakkerstroom. Here sheep thrive splendidly, as well as cattle and horses, and it is seldom that there is any serious sickness. Good crops of wheat and barley can be secured on irrigated lands, and mealies and Kaffir corn, simply by ploughing the ordinary veld, are grown with little attendant risk.

DESCRIPTION OF THE DISTRICTS OF THE TRANSVAAL

Translated from the "Staats Almanak," 1898.

PRETORIA.

This district has a surface area of 6258 English square miles, and a population of about 41,000 white inhabitants. It is bounded by the districts Heidelberg, Potchefstroom, Krugersdorp, Rustenburg, Waterberg, and Middelburg. South of this district are found the world-famed Witwatersrand diggings.

The agricultural produce is mostly forage, but wheat and mealies

are also grown. In the last year the crops were exceptionally good. Gardening, it is noticeable, is going steadily forward. More attention is being paid to cattle-breeding than before, though the stock was greatly put back by the rinderpest. Notwithstanding that much attention and trouble was given to this deadly sickness many farmers were ruined.

The ground of this district contains gold besides other minerals, amongst which silver is first.

The chief town of the district and the seat of Government is Pretoria, lying in a valley along the Aapias River, a branch of the Pienaars River; the latter falls into the Crocodile River. Pretoria is to a great extent surrounded by hills, whereon, during the last years, several forts were built—two to the south, one to the north, and one to the west.

The district is divided into six wards. The territory is part bush veld and part high veld. The bush veld is used as a winter pasturage for cattle, and is excellently adapted for the sowing of grain and the planting of fruit trees. The former is also suitable for the sowing of grain and for cattle-raising. It stretches to the boundaries of Middelburg, Standerton, Heidelberg, and Krugersdorp. The territory is a generally suitable one for fruit-growing, and there is an abundance of water. Much wood is hewn here, but very little planting is done to replace that taken away. The town, Pretoria, lies favourably and is surrounded on all sides by water. On the west side of the town and around the racecourse burgher-right erven¹ are measured off.

POTCHEFSTROOM.

The district of Potchefstroom is bounded on the north by the districts of Krugersdorp and Pretoria, on the east by Heidelberg, on the south by the Vaal River, and on the west by Wolmaransstad and Lichtenburg. It has a population of about 25,000, and a surface of 5889 square miles. Gold, iron, diamonds, asbestos, copper, and lime are found here. The reefs run from Johannesburg right through the whole district, including Klerksdorp to the Vaal River, and also from Heidelberg including Venterskroon. This district is exceedingly well suited for agriculture and gardening. On one property here are the great grottos or underground cellars, which are well worth seeing; the chief one, the "Wonderfontein," is very famous. Potchefstroom, the largest town in the district, and the capital of the Z.A.R.,² lies on the Mooi River, and has a population of about 5000.

¹ Erven = town sites.

² Being a translation from an official document the original name is retained.

RUSTENBURG.

The district Rustenburg lies in from the 24th to the 27th degree of lat. and 27th to 28th degree of long., and is bounded on the north by the Marico and Crocodile Rivers and the district Waterberg, on the east by the districts Waterberg and Pretoria, on the south by the district Krugersdorp, and on the west by the district Marico. Its area is about 10,665 square miles (English), and it has a population of about 11,000 whites and 25,000 natives. Gold, silver, copper, lead, and iron are found; and this rich territory contains still other minerals. In the direction of agriculture the district of Rustenburg is the most important and, in every respect, the granary of the Republic. Not only are all kinds of grain sown, but tropical plants grow magnificently there. The Magaliesberg tobacco is famous and well known over all South Africa. Rustenburg awaits the brightest of futures. Rinderpest, however, has done great damage to stock, thousands of animals having died. It is hoped that the railway will meet the agriculturists half-way. The town of Rustenburg lies to the north-east of the Magaliesberg, and is still the only town in the district. It has about 7000 inhabitants.

LYDENBURG.

The district of Lydenburg lies to the north-east of the Z.A.R., and is bounded on the north by the district Zoutpansberg, on the east by the Portuguese territory Delagoa Bay, the natural boundary of the Lebombo Mountains, on the south by Swaziland and the district Carolina, and on the west by the district of Middelburg. The size of this district is estimated at 12,000 English square miles, while the total white population is about 3000 persons. In the eastern portion, as also in the neighbourhood of the town Lydenburg, and to the north and north-east of the town, gold is found. Lately the diggings of Lydenburg have gone up in importance. De Kaap, Komati, and Pilgrim's Rest diggings lie in this district. In the south-east coal is found, and in the south-west quicksilver. The south-west portion is highland, and especially adapted for cattle-breeding and sheep-rearing. The middle portion principally consists of "banks" or so-called broken ground. Here all sorts of grain are sown. The north and east belong to the low country and are especially adapted for the laying-out of plantations for tropical plants. The chief products won up to now are wheat, forage, barley, mealies, Kaffir corn, and tobacco; fruit, as peaches, apricots, figs, apples, pears, oranges, lemons, &c., are also grown here in abundance. The town Lydenburg is situated along the Drakensbergen, and eight hours on horseback from the nearest railway station at Machadodorp. When the town gets connected by railway there will be every opportunity of progress in developing

the gold mines. The town has an abundant supply of water, and is prettily planted with trees. The streets are also now being better attended to. Lydenburg is a grain district, and is capable of supplying greater part of the land with grain if the drought and the locusts do not destroy the harvests. Cattle-breeding does not answer here. The rinderpest has done great damage, but it is hoped by inoculation to incur less loss. Lydenburg is one of the districts blessed with water. It is most healthy and the climate very mild. The greatest question is the labour supply. Lydenburg, the chief town, has a population of about 800.

MIDDELBURG.

The district Middelburg is bounded on the north by the district Lydenburg, on the east by the districts Lydenburg, Ermelo, and Carolina, on the south by Ermelo, Standerton, and Heidelberg, and on the west by Pretoria and Waterberg. The extent of the district is about 6066 English square miles, and it has a population of about 10,000 whites. The district is divided into high veld, rocky country, and bush veld. The high veld or south portion is very suitable for cattle-breeding; it is very rich in coal, and partially suitable for agriculture. The coal industry has progressed exceedingly; the coal found here is of the best. The "bankenveld"¹ is specially adapted for agriculture. Wood and water are found here in plenty. The district is, however, less suitable for cattle-raising. The bush veld, also styled the lowland, is rich in minerals, amongst others, gold and silver; it is very suitable for agriculture, and during the winter months also good for cattle-breeding. Corn, mealies, Kaffir corn, oats, and manna are extensively won, while all kinds of green crops and fruits thrive well in the warm districts. Middelburg, the chief town, is situated on the Klein Olifants River, on the high road from Pretoria to Barberton, and from Natal to Pietersburg. The town lies high, is very healthy, is well supplied with water, and has about 1500 white inhabitants.

WATERBERG.

The district Waterberg is bounded by the Crocodile River, and by the districts Pretoria, Rustenburg, and Zoutpansberg. The district is about 3000 farms in extent, each farm being about 3000 morgen, with a white population of about 5000. The farm Welgevonden was proclaimed in 1893. Diamonds were also sought for in the neighbourhood of the Warm Baths, and promising indications were found. In 1896 the district was severely ravaged by the rinderpest, drought, locusts, and fever. The minerals found here are gold, silver, lead, and quicksilver. The district is specially suitable for cattle-breeding and gardening, the latter especially, and

¹ Bankenveld = broken country.

promises much for the future. Products won are : corn, mealies, forage, barley, rye, manna, and tobacco. A trial planting of coffee has taken place at Piet Potgietersrust. The town Nylstroom, the chief town of the district, has a population of about fifty families ; there is a Landdrost office, telegraph office, prison, and powder-magazine.

ZOUTPANSBERG.

The district Zoutpansberg is bounded on the west by Waterberg, on the south by Lydenburg, on the east by Mozambique, and on the north by the Crocodile and Limpopo Rivers. It is the north-east boundary district of the Z.A.R., and is the largest. It has a surface of about 36,000 square miles, and has a white population of 8700. The middle and highlands of this district are well adapted for cattle-breeding and agriculture. In the north, in ward Spelonken, coffee, sugar, and rice are grown. Tropical plants are planted, for which the climate is very favourable. On the Houtboschberg, and in the north portion of the Spelonken, are extensive wood bush of great value. There grow yellowwood, whitepear, mahogany, turpentine, and several other kinds of trees. In the south portion of Zoutpansberg are found the saltpans from which thousands of bags of good and useful salt are obtained every year. The district is very rich in minerals ; those found principally are gold, silver, iron, cinnabar, galena, pyrites, tourmaline, and graphite. Diamonds are also found. The proclaimed fields now being worked are the Marabastad, Houtboschberg, Selati, and Klein Letaba diggings. Pietersburg, the chief town of the district Zoutpansberg, is a blossoming town of about 2000 inhabitants.

HEIDELBERG.

The district Heidelberg is bounded on the south by the Vaal River, on the west by the district Potchefstroom, on the north by Pretoria, Krugersdorp, and Middelburg, and on the east by the district Standerton. It is about 2970 square miles in extent, and has a population of about 74,000 whites. The principal products are grain and vegetables, as also all kinds of fruit. Gold and coal are found here in great quantities. Several companies have been formed to exploit the gold and coalfields. For agriculture and cattle-breeding the district is very suitable, although more shelter should be given to the cattle during the many rains in the summer and the cold winds in the winter. Heidelberg, the chief town of the district, lying on the Blesbokspruit, has a population of about 1000.

WAKKERSTROOM.

The district Wakkerstroom derives its name from a river named the "De Tak River," which runs through the chief town and delivers itself into the Buffels River. Besides the chief town, named Marthinus

Wesselstroom, named after President Pretorius, the towns of Volksrust and Amersfoort both lie in the district. In 1853-54 the Voortrekkers selected this district to settle in. They settled in the beginning near where Volksrust now stands. The place goes by the name of Verzamelbergen; the whole district used to go by that name once. The Voortrekkers selected one Jan v. der Schiff as their head for the year. On the 6th of November 1850 the district was, with its chief town, proclaimed by the Government of the Z.A.R. The district was then very extensive. At present the district is bounded on the north by the district Ermelo, on the east by the district of Utrecht, to the south by the districts Utrecht, Natal, and Orange Free State, and on the west by Standerton. The greatest portion is between 4000 and 6300 feet above the level of the sea, and has a white population of about 12,000. The climate of Wakkerstroom is very healthy. The district is a very favourable one for horse and cattle breeding, and for the purposes of agriculture the ground is very suitable. All kinds of products are won here. It is to be regretted that so few of the inhabitants endeavour to forward agriculture. In minerals, especially coal, Wakkerstroom is undoubtedly rich. Petroleum is found in the pits of the mountain-side at M. W. Stroom. The chief town, M. W. Stroom, lies on the Drakensberg, 6300 feet above the level of the sea. The town is very clean and lies surrounded by great mountain ranges, and has a surface of 9948 morgen.

UTRECHT.

The district Utrecht is bounded on the north by the district Wakkerstroom and Piet Retief, on the east by the district Vryheid, on the south by the colony of Natal. It is about 260 farms in size, with a population of about 2850 persons. The portion lying under the Belelasberg and bounded by the Buffels River, the boundary line between the Z.A.R. and Natal, is low or winter veld and more or less flat. A great portion of the district, which lies on the Belelas and other mountains, is summer or high veld. A third of the district can be named bush veld, especially the Pongola Bush, out of which, in early days, much wood was cut for building purposes; it is still carried on, on a small scale. The greatest portion of the district is mountainous. The ground now comprising Utrecht was exchanged by the Boers in the early years from the then reigning Kaffir king, Panda, and was for a time an independent state. Vechtkop, lying in the most southern corner of the district, on the Blood River, is famous in the history of the Z.A.R. as the place where the Zulu power under Dingaan was broken by the Voortrekkers under General Pretorius. After occupation of the district the Zulus caused much trouble, whereby farming was greatly hindered, until in 1878, when, as a nation, they were brought under foot. Coal is found at different places and in good quantities, and is declared by experts to be better than that in Natal. For agriculture the district is not so

suitable, on account of the scarcity of water on some farms ; the products grown are corn, oats, mealies, and tobacco. The ground is fairly suitable for cultivating fruit, which could be much improved. For cattle-breeding the district is exceptionally well adapted, and a great trade is done here in wool, hides, and slaughter cattle, while butter is made in large quantities and sold. The town Utrecht, the largest town in the district, lies under the Belelasberg, and has about 500 inhabitants.

MARICO.

The district of Marico, lying in the north-west of the Z.A.R., has a white population of about 6500, and is about 3083 English square miles in extent. The district contains gold, silver, copper, lead, cinnabar, zinc, coal, saltpetre, and sulphur. The whole district is very suitable for agriculture, while the ward Bushveld is very good for cattle-breeding. The products won till now are corn, oats, barley, mealies, and potatoes, and nearly every kind of fruit and vegetable. If the Marico district is properly worked it will be undoubtedly the richest in the Transvaal, because splendid fields for sowing and grazing are met with, and an abundance of water. Zeerust, the chief town of the district, lies about 150 miles from Pretoria, and 36 from Mafeking, and has a white population of about 800.

LICHTENBURG.

The district Lichtenburg is bounded on the north by the district Marico, and on the south by the districts Potchefstroom and Bloemhof, on the east by the district of Potchefstroom, and on the west by British Bechuanaland. The district is about 1,500,000 morgen¹ in extent, and has a white population of about 6500. Gold quartz is found here with 5½ oz. to over 6 oz. per ton. Also lead and saltpetre. Much ground has not yet been prospected, and farms are eagerly bought up in this district. With regard to agriculture and cattle-raising the district awaits a clear future. Corn, oats, barley, Kaffir corn, mealies, manna, potatoes, tobacco, and vegetables of every sort are grown with good results, on account of the ground being suitable. Cattle and sheep do well. Lichtenburg is the chief town in the district, and lies on the northern portion thereof, at the source of Harts River ; it has an abundance of water, is one of the healthiest towns in the Republic, and has a population of about 700.

BLOEMHOF.

The district Bloemhof is one of the oldest districts in the Z.A.R. It is bounded on the south-west by Griqualand West, on the east by the district of Wolmaransstad, on the north-east

¹ Morgen = 2.112 acres.

by Lichtenburg, and on the south by the Vaal River and Orange Free State. From the west to the north-east the length is 72 miles, and from the east to the north-west about 90 miles. The white population totals about 3600. The surface is about 3081 English square miles in extent. On account of the scarcity of water very little has been done towards cattle-breeding and agriculture. Since the rinderpest made its appearance, the inhabitants do more cultivating than hitherto, and therefore there are welcome signs of progress. In the diamond fields near Christiana progress is also noticeable. The reason that the inhabitants have come to the conclusion that there are payable metals and minerals to be found in the district, is that different big companies, like the De Beers Company and Oceana, have bought up several farms; but so far no definite proofs have been shown. The principal towns that lie in the district Bloemhof are:—1. Christiana, the chief town of the district, lies on the Vaal River, near the Orange Free State, Griqualand West, and British Bechuanaland. It is a beautiful town, well provided with water, and used to be the principal import centre of the State. The inhabitants go in specially for agriculture, and in a few years the town will be one of the prettiest in the Z.A.R. Railway connection is the greatest want that the burghers and inhabitants feel. Christiana consists of 7043 morgen and 328 square roods, and has about 500 inhabitants. The principal buildings are the Government building, in which are the Landdrost, post, telegraph, and customs offices, a prison, barracks for mounted and foot police, and Dutch and English churches. 2. Bloemhof, in extent about 5000 morgen, lies on the confluence of the Vaal and Vet Rivers, near to Hoopstad, Orange Free State, about thirty miles north of Christiana; it has about 60 inhabitants, and will also become a pretty village.

STANDERTON.

The district Standerton, named after its chief town, takes its name from the first settler, Adriaan Stander, who still lives, like a patriarch, among his family there.

The district lies in the 26° 50' of lat. and 30° of long., on the so-called high veld, and is bounded on the north by the district Middelburg, on the east by the districts Ermelo and Wakkerstroom, on the west by the district Heidelberg, and on the south by the Vaal River and Natal. The district Standerton is about 742,000 morgen in extent, with a white population of about 4000 men and 3750 women, while the native population is estimated at 1500 men and 1300 women. Besides the Vaal River, which has its source in the neighbourhood of Ermelo, and which passes Standerton, the district has also the following streams:—Blesbokspruit, which runs about eight miles north-east of Bethal, and falls into the Vaal River about two hours from the town of

Standerton; Waterval River has its source on the boundary line between Standerton, Heidelberg, and Middelburg, and runs near Villier's Drift into the Vaal; Boesmansspruit rises two hours to the north of the town Standerton, and runs near the Roodekoppen into Waterval River.

The high veld, and it can also be said the whole district, contains coal, and on many farms on the Vaal River unmistakable visible signs are to be found. It is undoubted that when time and conditions allow any good organised attempt to be made to bring this fuel profitably to the surface, it will be crowned with success. Lately also indications of gold have been found. Agriculture and cattle-breeding are carried on with success in this district; the principal products are oats, mealies, and manna. The town of Standerton, lying on the Vaal River, is about 96 miles from Johannesburg, 50 miles from the Natal border, and 18 miles from that of the Orange Free State. It is the chief town of the district, with a population of about 500.

ERMELO.

The district Ermelo is bounded on the north by the district Carolina, on the west by the district Standerton, on the south by the districts Wakkerstroom and Piet Retief, and on the east by Swaziland. The district is about 1,087,500 morgen in extent, with a population of about 4500. Coal is found here in large quantities; gold and sulphur have also been discovered. The district is well adapted for agriculture, though cattle-breeding has taken more or less the upper hand. The chief products won are: grain, mealies, and potatoes. The town of Ermelo has about 1500 white inhabitants, Landdrost, post and telegraph offices, seven shops, and the church building of the Dutch Reformed minister.

PIET RETIEF.

The district Piet Retief is bounded on the north by the district Ermelo, on the west by the district Wakkerstroom, on the south by the districts Utrecht and Vryheid, and on the east by Swaziland. The district is about 300,000 morgen in extent, and has a population of about 1600. Lately on several farms gold-bearing quartz has been discovered, though not yet in payable quantities. For tree planting the district is exceptionally suitable, and plantations can be laid out at small cost. For agriculture the district is less suitable, and little mealies and potatoes are grown. Corn is usually killed by the frost. During certain periods of the year the district is suitable for large and small stock. By drought and rinderpest many sheep and cattle were lost. Horse-sickness seldom occurs here. The town Piet Retief has a population of about 100.

VRYHEID.

The district Vryheid is bounded on the east and south, and for the greater part on the west, by Zululand, and a portion of the west and whole of the north by the districts Utrecht and Piet Retief. The district is about 1,200,000 morgen in extent, comprising 1100 farms, with a white population of about 5200. Coal is found here in abundance, and of very good quality, while gold, silver, iron, copper, and asbestos have been discovered on several farms, and the gold mines are already being exploited. Especially in the latter half of 1895 representatives of big syndicates of Europe, Johannesburg, and elsewhere went through the country and bought and secured farms. The greatest portion of the district is adapted for agriculture and cattle-breeding. The chief articles of trade are: wool, hides, grain, waggon and carpenter's wood, and coal. The town Vryheid, the only town in the district with a white population, is about six hours from Utrecht and seven hours from Dundee in Natal, the nearest railway station. The district is very mountainous and rich in water. The portion near the Lebombo Mountains in the low veld is where the Boers trek with their cattle. Big game is plentiful—Koedoe, Rooi buck, Water buck, Riet buck, and Blauw wildebeeste.

CAROLINA.

The district Carolina in the east of the Z.A.R. is bounded on the north by the district Lydenburg, on the east by Swaziland, on the south by the district Ermelo, and on the west by the district Middelburg. The extent of the district is about 1,000,000 morgen, while the white population totals 3700. In the north portion in the neighbourhood of the town gold is found. Coal is found over nearly the whole district; tin also, both alluvial and reef, exists in the north-east portion. The western portion is high veld, and very suitable for large and small stock and horses. Horse-sickness occurs here very seldom. The north-eastern is low veld, and very suitable for tropical plants and fruits; the laying out of plantations has begun here. The chief products won are: wheat, oats, barley, mealies, rye, Kaffir corn, and tobacco; fruit such as peaches, apricots, lemons, figs, nuts, apples, pears, plums, grapes, &c., are grown in large quantities. Carolina, the chief town, has a population of about 260.

KRUGERSDORP.

This district, proclaimed in the *Staats Courant* of 7th November 1894, comprises about 350 Boer farms, and has a population of about 20,000. It is formed out of a portion of the districts Pretoria, Potchefstroom, Rustenburg, and Heidelberg. The district is divided into three wards, Ward No. 1 comprising the pro-

claimed ground, and Wards Nos. 2 and 3 all the unproclaimed ground. By a resolution of Volksraad, Art. 119, dated 26th April 1887, the Government decided to buy a portion of Paardekraal, and thereon a township was laid out and named Krugersdorp, which has in a short time noticeably extended itself. It used to belong to the Witwatersrand diggings. Krugersdorp was proclaimed on the 1st November 1888 a separate diggings, and under its jurisdiction are also the diggings known as Florida, Doornkop, and Blauwbank. Krugersdorp is the chief town of the district, and lies thirty-five miles from Pretoria and eighteen miles from Johannesburg.

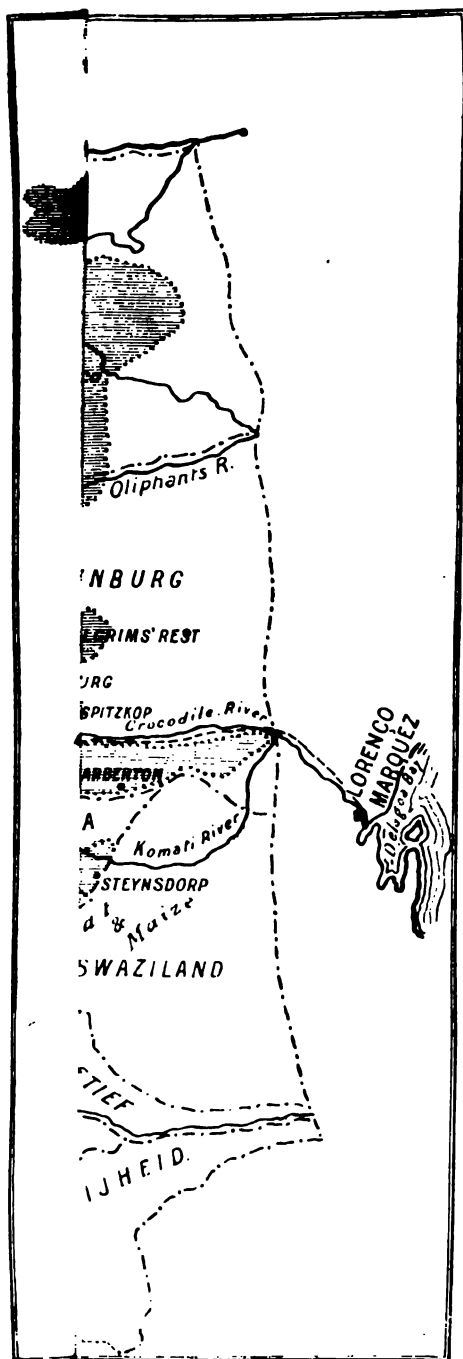
WOLMARANSSTAD.

The district Wolmaransstad was declared a separate district on 15th January 1896, and is composed of what was once the ward Makwassie—a portion of the district of Potchefstroom, a portion of Bloemhof, and a portion of Lichtenburg. It is situated in the southwest of the Z.A.R., and is bounded on the north by Lichtenburg, on the west by Bloemhof, on the east by Potchefstroom, and on the south by the Vaal River, which separates it from the Orange Free State. The town Wolmaransstad lies almost in the centre along the Makwassiespruit. The erection of a dam to supply the town with water is proceeding. About nine miles from the dorp¹ the farm Witpoort is situated, which is also laid out in erven, and where about twenty families are living. The district is not rich in water. The means of livelihood are agriculture and cattle-breeding. The cattle of Makwassie are reckoned as the best in the Transvaal. Sheep and goats answer well. The district suffered heavily through the rinderpest, and lost 31,000 cattle, while, by the help of Dr. Koch's method, 10,000 cattle remained. Products won are corn, oats, barley, mealies, and Kaffir corn, while all fruits grow very well, especially grapes. Gold has been found on several farms.

These descriptions of the various districts of the Transvaal, written by the Boer officials themselves, supply many interesting details, and some of them contain their own commentary on the backward state of agriculture, as, for instance, the remark about Wakkerstroom: "It is to be regretted that so few of the inhabitants endeavour to forward agriculture."

In Appendix G. will be found an abstract from a report made by Mr. D. M. Wilson to President Kruger in 1897 on "Agricultural and Mineral Possibilities in Certain Districts of the Transvaal, and particularly of the Unoccupied Government Lands." There are many interesting comments in this report on the ways of the Boers and their condition

¹ Dorp=village.



as an agricultural community. He remarks about Roos Senekal :—

“Although this district is *wonderfully fertile*, I found the inhabitants *more poverty-stricken* than any I have met in the Transvaal. They mainly consist of Arme Boeren,¹ who, instead of benefiting by their being placed in a position to improve their condition, have deteriorated, and live in a condition of squalid misery and poverty. Their only excuse is that they are far from any market and the roads are very bad. Until the railway reaches them their condition is not likely to improve. Nearly all the land in the district is Government land, and affords room for thousands of poor farmers; but to place them here on the old system would result in making their condition even worse than at present. No notice should be taken of the complaints from this district. The people are lazy and expect the Government to maintain them.”

Mr. Wilson was not afraid to speak openly to the late autocrat of the Transvaal; his report is well worth reading, as it gives particulars of the capabilities of the various districts visited, and the opportunities offered for settlement on the Government lands in each locality.

LIVE STOCK.

It now follows to give some detailed information about the various branches of the land industry, and a beginning may be made with live stock, of which horses can be taken first.

Horses.

The horse most in evidence is the Cape horse, and he suits the requirements of the country admirably. He is hardy in constitution and able to do long journeys with little food and less attention. The Boer uses his horse for riding and driving the long distances to and from town and to and from his neighbours' farms, and seldom for any other purpose. During the war the Cape horse has shown evidence of his usefulness and endurance.

In the towns a higher class horse is used, and some of the more advanced farmers have done well by breeding im-

¹ Arme Boeren = poor Boers.

proved stock from imported stallions. They have been assisted in this by the richer Rand men, who have established racing studs and generally encouraged the improvement of the horses of the country. The price of a good country bred horse in the Transvaal is from £15 to £25, while for a first-class pair of carriage horses of superior breed, from 60 to 200 guineas may be obtained, according to style and quality.

Mule breeding is another profitable branch of stock raising. Mules are always in demand, and a good pair of mules will command from £35 to £50 at most times on the Rand. All the southern parts of the Transvaal are suitable for horses and mules if reasonable care is taken. Even horse-sickness is not so prevalent, and with precautionary measures taken by way of giving preventatives and keeping under cover at night during the latter part of the summer only a very small percentage of loss will occur. In the bush veld and the low country it is still hazardous to keep many horses. The number of horses in the Transvaal in ordinary times may be estimated at 200,000, but the War has probably accounted for more than half, and it is even doubtful whether there are now 50,000 in the country—outside the army.

The following observations apply to both the Transvaal and Orange River colonies.

The unavoidable action of the Commander-in-Chief, which has caused the removal of all horses, rideable or untrained, from the farms on which they have been reared, will cause much difficulty when the time comes for re-stocking. On the whole it may be looked upon as a blessing rather than otherwise. The farmer will be able to start with well-chosen, select mares, and Government aid should be given by the importation of thoroughbred horses which can stand in the best districts of the Transvaal.

Suitable stallions can be secured at cheap rates in the English markets, and the cost of importation and upkeep of the stud should not be extravagant.

Ten thoroughbred horses with plenty of bone and sub-

stance could be bought and landed in Africa for a matter of £3000, and the cost of maintenance would not be more than £1600 per annum, calculated as follows:—Stud groom, £300; ten native grooms at £3 per month each, say, £360; food, £840; contingencies, £100; total, £1,600.

The Hackney, Cleveland, and kindred breeds have been tried in the Cape Colony and have been generally voted a failure, whereas the thoroughbred horse is answerable for the game, clean-made cobs which have been so successful during the War.

The Government will be well advised to keep as many Walers and English mares as can possibly be spared from the remount depôts for sale on advantageous terms to farmers or settlers.

No farmer or settler should be allowed to buy more than he can show his ability to feed, as imported horses cannot exist on the veld without the aid of artificial feeding. A farmer should, however, be able to feed two or three good mares, and their progeny would gradually be hardened and thrive on the veld. The outlay of £3000 and upkeep for, say, five years would cost £10,500, and if the results proved encouraging the scheme could be expanded. The option should be given to farmers to buy stallions from the Government at cost price plus expenses, and, to insure quality, a known good judge should be selected for their purchase in the home market.

The small African mule, which is as tough as whipcord, is the produce of mares of a poor class and of inferior donkeys. A better class can easily be obtained by selecting mares and importing jackasses; but this class of farming can be carried on best by the wealthier farmer, who does not require to rely on a yearly increase in his troop of mares.

Cattle.

Cattle constitute the greater part of the realisable wealth of the Transvaal Boer and of the Transvaal Kaffir.

The greater portion of the cattle are either of the Afrikaner breed or crosses from Friesland or shorthorn bulls.

The Afrikaner cattle are believed to be descendants of the indigenous cattle of the country owned by the Hottentots and Kaffirs before the Portuguese came to the Cape.

These were doubtless crossed by imported cattle from time to time, but the Afrikaner ox of to-day may be said to be a true native of the country. He is a valuable draught animal, and can live and keep in condition when heavier and more tender animals would die. The cross-bred cattle are better for slaughter purposes, but are not so hardy. For dairy purposes the farmers near the towns keep Friesland and Shorthorn and sometimes Kerry cows. A prime fat ox in ordinary times is worth from £9 to £14, and a good trek ox about the same. A Kerry cow in full milk giving twenty-five bottles or more a day is worth from £30 to £35. Cattle thrive well in most parts of the Transvaal, but especially on the high veld. The Boers drive them to the low veld as a rule only in winter.

The dairying industry is capable of great enlargement. Milk brings 4d. to 6d. a bottle. Good butter ranges from 1s. 9d. to 2s. 6d. per lb. in Johannesburg. Local made cheese is almost unknown. Near the large towns properly equipped dairies would find a profitable and abundant demand for their produce. So far the Rand is supplied with butter from the Cape Colony and Australia. The number of cattle in the Transvaal three years before the War may be estimated to have been over a million. Rinderpest, lung-sickness, and the War have destroyed by far the greater part, and it is doubtful whether there are now 200,000 head.

The following observations apply both to the Transvaal and the Orange River colonies.

The waste caused by lung-sickness and over-driving during the War cannot fall short of 100,000 oxen, and at a low estimate some 200,000 head of breeding cattle and calves have been killed for meat. This waste was for the most part unavoidable. Perhaps more cars for frozen meat might have been provided. Lung-sickness and red-water have carried off probably another 100,000. A prominent Boer near Pretoria had 140 head of breeding cattle at the beginning of the War; now he has only forty. These

figures present an alarming outlook, coming as they do on the top of the ravages of rinderpest, and it must not be forgotten that the animals thus destroyed were mostly acclimatised.

How to make this good is a serious problem and one which requires immediate attention. Arrangements should be made for shipments of two-year-old heifers from Australia for sale to Boers and settlers at cost price and on the best possible terms.

A really good class of heifer can be landed at Cape Town at £10, and Cape Town should be the landing port. At Port Elizabeth, East London, and Durban red-water¹ is so bad that it is impossible to keep cattle uninfected while trucks are being provided. The late Rt. Hon. C. J. Rhodes quite recently brought 1000 head of cattle from Australia, more than half of which died at Beira from red-water, but Mr. Rhodes was a hard man to beat, and breeding cattle are wanted in Rhodesia, so he ordered more. The new Government similarly must not be discouraged if difficulties appear.

Care should be taken by the Government to retain as many of the loot cattle as possible for issue to Boers and settlers on peace being declared. Lord Kitchener has already promised something to this effect.

As soon as possible the *slaughter of breeding cattle should be put a stop to* and more adequate arrangements entered upon for forwarding larger supplies of frozen meat.²

By the importation of Australian heifers and English and Friesland bulls a really fine class of cattle can be obtained. Afrikaner cattle must at the same time be preserved to the greatest extent possible, because as trek oxen there are none better, and without a span of trekkers no farm in South Africa can be properly worked.

¹ Professor Wallace, "Farming Industries of Cape Colony," p. 293, says: "Red-water in cattle, as it is understood in Cape Colony, is not the non-contagious derangement known by the name in Great Britain, but is identical with the highly communicable disease called 'Texas fever' in the United States of America. Dr. Hutcheon describes it as 'A specific infective fever characterised by great nervous prostration, congestion, and loss of function of the digestive organs and disintegration of the blood, with the rapid escape of some of its constituents by the kidneys, the urine having a colour like sherry, or even dark claret at times.'"

² Unfortunately there seems evidence of a renewed tendency of late to cut down the supplies of frozen meat.

Sheep and Goats.

Sheep only thrive on the high veld, and that best in the south-eastern and south-western districts. In the other parts of the country the grass is too long and rank, and the animals sicken and die. The prosperity of the Ermelo, Standerton, and Wakkerstroom Boers is greatly due to sheep-farming, and this applies as well to the districts of Wolmaranstad and Bloemhof. Both Afrikander and Merino sheep are bred, and when in good condition bring good prices, from 20s. to 25s. being the ruling rate. Wool is worth about 4d. per lb., and a fair clip in the Ermelo district averages $4\frac{1}{2}$ lbs. per sheep.

Goats are not numerous in the Transvaal; a few of the large native Afrikander goats are kept to act as leaders for the flocks of sheep. The meat is sold as mutton, and a good-sized fat goat is worth about 20s. The number of sheep and goats in the Transvaal before the War may be estimated at 1,500,000; probably three-quarters have been killed or have died during the War. The problem of restocking sheep and goats is also an urgent one.

Poultry.

As an addition to dairy farming the keeping of poultry is extremely profitable. Fresh eggs are never obtainable at less than 1s. 6d. per dozen on the Rand, and the price is often as high as 2s. 6d. or 3s. Fowls are worth 2s. to 2s. 6d.; turkeys, 7s. 6d. to 15s.

Pigs.

Pigs are outcasts in the Transvaal, and are allowed to run about in a semi-wild state. The ordinary country pig is a lanky, half-starved-looking animal, with a shape approximating to that of a greyhound. The Boer neither knows how to feed his pig nor how to turn him into good bacon, consequently most of the bacon and ham used in the country is imported.

AGRICULTURE.

Cereals.

Wheat is largely grown, especially in the favoured Rustenburg-Marico country, and along the Schoonspruit and Mooi Rivers. The yield varies from twenty to forty fold. The Boers of the Transvaal, as a rule, grow no more than suffices for their own consumption. The price of wheat is above 8s. a bushel, and the bulk of the wheat and flour used is brought from America and Australia.

Oats are mostly reaped as oat-hay, and used as forage for horses. Oat-hay is one of the most extensive crops. The price per hundred bundles varies from 20s. to 30s. or 40s. Wherever irrigation is possible oat-hay can be grown either on the high or low veld.

Barley is not much grown, and is usually cut as green forage for horses and cows. A little encouragement has been given to farmers to cultivate barley by the policy of the Hatherley Distillery Co. in supplying the seed and buying the crops.

Mealies, or *maize*, is undoubtedly the greatest cereal crop in the Transvaal. The natives grow immense quantities for their consumption and for sale to the mines to feed their brothers at work there. The crop is grown all over the country, and gives a yield of about sixteen to one. The largest quantities are grown in the Northern Transvaal, but owing to expense and lack of transport the native growers have not had great benefit. The Pretoria-Pietersburg railway was beginning to remedy this when war broke out. The Transvaal could easily become a maize-exporting country, and yet for some years foreign supplies have had to be obtained for the mines. Some enterprising German farmers make the green stalks of mealies into ensilage, which has been found to be excellent for fattening cattle.

Kaffir corn grows in equal abundance to mealies. It is used by the Kaffirs as one of their principal foods when in their own kraals. Immense quantities are grown. The

plant grows luxuriantly and gracefully to a height of six or seven feet. A field of Kaffir corn in full bloom is a beautiful sight. The natives make their Kaffir beer from this grain.

The Imperial Transport service has been using a number of traction engines during the War. When peace comes these could be usefully employed by being hired out to settlers for ploughing. There will be a great scarcity of trek oxen for this purpose, and these engines would go a long way towards supplying the deficiency.

MARKET-GARDENING.

Green Crops.—All the ordinary green crops grow well in the Transvaal. Potatoes, turnips, beet, and other roots are largely cultivated, and bring good prices. There is always a scarcity of potatoes, the price seldom falling below 15s. a bag, very often it ranges between 30s. and 40s., or even more. Cabbages, beans, peas, and other vegetables are also largely grown near the towns. Market-gardening is very profitable, and is mostly carried on by the more industrious Boers and Italians and Indians, who speedily amass small fortunes from comparatively small pieces of ground. Other Europeans than Italians appear not to have the necessary love of actual work on the land which is necessary for successful gardening.

Fruit.—The most plentiful fruit is the yellow Transvaal peach. This is a peach tough in the flesh and of a deep amber colour. It grows everywhere in the country, both in gardens and even wild. The peaches are cut up and dried, and stored for winter use, making a useful and healthy food. The finer peaches have an equally wide range, but are of best quality and flavour in the Pretoria, Rustenburg, Marico countries. Apricots have a similar range to that of peaches, and are utilised much in the same way. Apples, pears, plums, grapes, and figs all grow well if well looked after, and bear prolifically. Grapes are extensively grown, but are not so fine as those of the Cape Colony. The finest fruit the Transvaal produces is the orange, and the best districts for its cultivation are Rustenburg and Marico. Here the

orange attains a perfection probably unsurpassed anywhere in the world. The fortunate possessor of an orange grove in one of the Magaliesberg valleys does not require to do much work. He can comfortably and confidently reckon on an income of from £300 to a £1000 a year. Pineapples and bananas grow well, especially in the low veld, but their cultivation has not hitherto been extensive.

Fruit always brings a good price on the Rand market. Peaches are sold retail from 1d. to 3d. each. Oranges are usually 2d. or 3d., and so on. The supply is not equal to the demand, and the shortage is consequently being made up by shipments from abroad. The great cause of this is lack of transport facilities. New railways are required to alter this. Light railways would in many places serve; they could be constructed cheaply, and would serve as feeders to the main lines. Where railways are not possible, fruit-canning and preserve-making could be started. At present, in many places the finest fruits are allowed to rot on the ground. This could easily be stopped by the introduction of a little energy, and it would soon be found to pay.

SUB-TROPICAL PRODUCE.

The cultivation of sub-tropical produce, which cannot be indulged in on the high veld owing to the early winter and the cold winds, should in the low country become one of the chief agricultural resources of the Transvaal. Sugar, coffee, tea, and cotton planting may be made to play a great part in the future development of the new colony.

Sugar.

Sugar-cane has been grown for years throughout the Kaap Valley, and although the quantity has never been large enough to credit it with more than the nucleus of an industry, sufficient proof has been adduced that given irrigation in dry seasons, soil and climate are suitable for its expansion throughout the low country into an established industry. The late Government granted concessions for sugar-planting

alongside the Crocodile and Komati Rivers near to the Portuguese boundary, and it was hoped by many interested in the project that the owner would find it to his interest to put the grant to some practical use. Unfortunately, the sugar concession, like many others granted by Mr. Kruger's Government to speculators, has simply been held fallow in the hope that some enterprising individual might come along who would conform to the provisions of the deed. Sugar-growing on a commercial scale has not so far been tried in the Transvaal. The needs of the population, and the hoped-for expansion of the country under better auspices, may direct serious and profitable attention to its production.

Coffee.

Coffee has been grown for some years, and one plantation in the Kaap Valley has been extended, and was doing exceptionally well. In Swaziland, where coffee was tried at first with success, the disease unfortunately swept off nearly all the plantations. So far disease has not made its appearance in the Kaap Valley. North of Pietersburg, in the Spelonken, coffee-planting is an established industry. The coffee grown is of the finest quality, and the home grown product now nearly suffices for the local demand. A German firm of planters, Messrs. Dickie Bros., reaped 25,000 lbs. last year. They sold the coffee to the Pietersburg storekeepers at 2s. 6d. a lb. for the raw beans. This has been the only supply the Boers have had since the occupation of Pretoria.

Other German enterprises are those of the Thabina and Westfalia Companies on the Groot Letaba. Mr. Schneider, one of the directors, has kindly supplied the following description of the Companies' lands and the industry they are establishing.

The statistical table of imports of food stuffs into South Africa to which he refers will be found in Appendix J. These imports, he considers, would be unnecessary if proper attention were given to agriculture.



SPECIMEN OF COFFEE PLANT

1. The first part of the document is a list of names and dates.

*Thabina and Westfalia Companies' Lands on the
Groot Letaba River.*

The south-east of the tropical part of the Transvaal is very well adapted for the growing of all tropical and sub-tropical products, such as sugar-cane, coffee, cacao, tea, tobacco, and all kinds of fruit—bananas, pine-apples, oranges, &c.; also for the planting of forests. The practical success of the cultivation of all these above-named products is now fully demonstrated by actual results. Everything essential to the establishment of a great agricultural industry is here:—

- 1st. Virgin soil of great fertility.
- 2nd. A situation extremely well sheltered, being surrounded by the Woodbush Mountains, which are overgrown with thick forest.
- 3rd. Denudation of these mountains has caused alluvial soil to be deposited for centuries, and this is still going on, and thereby the fertility of the land is maintained.
- 4th. Every description of soil necessary for the cultivation of various tropical plants is found here.
- 5th. Two large rivers, as well as several small ones, run through the estates. These can be used for irrigation, driving of machinery, electric lighting, and other industrial purposes. The name of "The Transvaal Nile delta" would be specially applicable to these lands.
- 6th. Many kinds of useful woods are abundant.
- 7th. There is an unlimited supply of native labour, the district being the most thickly populated in the Transvaal. There are about 22,000 Kaffir families, or about 110,000 men, women, and children in the vicinity. The average wages are 20s. a month and free food, and the Kaffirs rather work here for those wages than for much higher rates in the mines. This is the natives' home, and they are accustomed to the warm,

almost tropical, climate. The Kaffir's food—mealies and Kaffir corn—grows abundantly on the spot. Consequently, wages and food together cost no more than 30s. a month.

8th. The local market is unlimited, as is shown by the official statistics of the customs' returns for the different South African countries for the past three years. (*See Appendix.*)

9th. Railway communication will soon be available in two directions — Pretoria-Pietersburg Railway and the Selati Railway. The distance from the Pietersburg terminus is about sixty miles, and from the Selati terminus about twenty-five miles. It is most likely that these two termini will be connected before long.

The Transvaal has at present, excepting gold and coal, practically no other industries; and with the immense water-power available in the district, it would be possible besides tropical agriculture to establish many other kinds of payable and necessary industries. In fact, great industrial development should follow in the natural course of things.

The companies under notice have already made profits amounting to 25 per cent. on their capital. They are planting sugar-cane, tobacco, coffee, all kinds of tropical and semi-tropical fruits, such as bananas, pineapples, oranges, &c., maize, potatoes, vegetables, &c., and also breeding cattle and cultivating forest (sylvan culture). There is also a small cigar factory making excellent cigars and cigarettes from tobacco grown on the spot. Besides the alluvial lands in the valley, there are eight farms with an area of about 2000 acres on the top of the mountains, about 7500 feet above sea-level. These have plenty of water, and are excellently adapted for breeding horses and cattle, and for dairy-farming and cheese-making. No horse sickness or rinderpest, or any other kind of sickness, has ever been known there. This spot would also make an excellent health resort; the scenery is simply magnificent, and the distance

is only forty miles from Pietersburg, which is connected by railway with Pretoria.

The first crop of the *Coffee* trees (these are bearing already after the second year, whereas in Java they bear only in the fourth and fifth year) was on an average $3\frac{1}{4}$ lbs. per tree. The Transvaal has already a famous name for its *Tobacco*, which is at present grown and cured in the most primitive manner; therefore the highest results can be expected if this tobacco cultivation and manufactories, &c., are conducted on scientific and practicable principles, as in Havanna, Sumatra's east coast (Deli), Manila, &c. The *Sugar-cane* grown on the companies' ground is in size and luxurious growth equal to that of the best plantations of Java, which is one of the leading sugar-cane growing countries of the world. Numbers of trees of the well-known *Eucalyptus* grew on the companies' grounds to a height of twenty feet in one year. Wood is very scarce in South Africa, and has to be imported from foreign countries for all kinds of purposes, and the demand is ever increasing on account of the enormous mining industry, which is only in its childhood compared with what it will be in the future, and the prices paid are very high and remunerative. The freight from Delagoa Bay to Johannesburg is higher than the original cost price in the country where the timber comes from.

The writer of this has travelled twice round the world, has been long engaged in tropical agriculture, and has had an experience of eighteen years as administrator of large plantations in Java and Sumatra; but he has never seen a country where everything essential to the success of a great tropical agricultural industry has been so lavishly supplied by nature as it is here.

The Thabina Colonisation Farming Association, Ltd., has planted about as follows:—

Diverse coffee-trees from 1 to $4\frac{1}{2}$ years old	50,000
Diverse tropical and sub-tropical fruit-trees and fruit-bushes	18,000
Diverse kinds of useful wood	40,000
	108,000

For transplanting in the seedbeds ready as follows :—

Coffee-trees	100,000
Diverse fruit-trees, &c.	5,000
Diverse kinds of wood	15,000
	120,000

The Westfalia Company has planted :—

Diverse coffee-trees	20,000
Diverse tropical and sub-tropical fruit-trees	3,000
Diverse kinds of useful wood	3,000
	26,000

For transplanting in the seedbeds as follows :—

Diverse coffee-trees	50,000
Diverse fruit-trees	8,000
Diverse kinds of woods	4,000
	62,000

H. W. SCHNEIDER.

Cotton.

Cotton-growing is another possible industry, the tropical lowlands of Swaziland abutting on the Portuguese frontier being suitable for it, both in soil and climate. Extensive concessions in Swaziland, running up the Bomba, are held by English capitalists for the exploitation of cotton and other products. Swaziland, both because of its history and its geographical position, will probably be merged into the Transvaal.

Tobacco.

Tobacco grows easily and luxuriously almost anywhere, and there are some fine valleys containing eminently suitable soil where the best leaf can be produced. It is rather owing to the methods of drying and preparation than to the quality of the leaf that the unsatisfactory character of some Transvaal tobacco is due. As with other industries which require special knowledge, experts must be brought in to advise upon the districts that in climate and soil are best adapted for tobacco growing, and especially must the services of the

expert be utilised in the preparation of the leaf for the market. Magaliesberg tobacco from the Rustenburg district is greatly renowned. Tobacco is grown in nearly every district of the Transvaal, but Pretoria, Potchefstroom, Rustenburg, and Zoutpansberg are the districts where the plant grows best and where it develops most agreeably the special aroma peculiar to Transvaal tobacco. When once a smoker has become accustomed to the flavour, he prefers it to any other. Transvaal tobacco is probably the finest pipe tobacco in the world; it does not burn the tongue nor give headache; it is best when it is pure, not flavoured. Experiments have been made in the planting of Havana, Sumatra, and Manila seed, but the result is always that the special characteristics of these tobaccos are lost. In their stead the product has the qualities peculiar to the Transvaal. There may sometimes be a slight change in the leaf: it may be a little lighter or darker or bigger, but it does not resemble in the least the imported leaf from the countries where the seed was produced. Tobacco is rather an expensive crop to cultivate on account of the necessity of keeping the land clean. Weeds grow with surprising rapidity in the warm tobacco country, especially when the land is watered by irrigation. In most districts the land requires manure; only along the river sides in the Rustenburg and Zoutpansberg districts, where the soil consists of rich vegetable mould, can more than a few crops be obtained successfully without fertilisation. Transvaal tobacco is unsuitable for cigars, but makes good cigarettes on account of the mildness and delicacy of the flavour. If proper attention be given to preparation for the market, Transvaal tobacco should gain a name for itself in England and Europe as the finest for the pipe obtainable anywhere; if smokers generally knew about it the tobacco would speedily be considered a luxury. Von Erkom, of Pretoria, has so far produced the best, and most adapted to the European taste. Transvaal tobacco can now be purchased in London.

*Cocoa.**Extracts from a Report on Cocoa Planting by H. S. Altenroxel.*¹

KRABBEFONTEIN, 22nd August 1898.

Report on the possibility and future of the cocoa culture on the slopes of the Woodbush Mountains.

Messrs. H. W. SCHNEIDER and J. H. W. BAL, Pretoria.

DEAR SIRs,—You are desirous to have my opinion on the question whether the cocoa culture would be a safe and payable undertaking in our ward. I am glad to be able to give you a few details on this matter, as, during my five years' experience in tropical agriculture, I have been studying the climate and soil of our property and the adjoining fields.

I have long ago been of opinion that the cocoa culture on the farms of my company, although on specially selected parts, would not alone be possible, but also have the greatest reason to be a fine success. I have not been going in for planting cocoa on account of the expensive means of shipping the crops, and on account of want of capital. As we are being connected by railroads, &c., with the world—as capital is available, and as the demand for cocoa is increasing daily—the cultivation of cocoa, in suitable positions such as ours, is one that most certainly should be undertaken.

The cocoa-tree (*Theobroma cacao*) in general wants a more tropical, that is, a more moist warm climate than the coffee. During this winter, which is known to have been the coldest season for the last twenty-five years in the Transvaal, we proved that a young and unsheltered coffee plantation on a very exposed slope did not suffer in the least from the cold; even the cocoa-tree would not have suffered on the same exposed positions, but we do not want to plant it there, as we have most beautiful sheltered and warm valleys, which are, with more constant temperature and moisture, splendidly suited for cocoa planting. I believe we are here on the 23rd deg. south latitude, and still the cocoa-tree may be cultivated with success on a much higher degree south. On the other side, again, you may go much nearer to the equator and would not be able to grow cocoa on account of unfavourable local positions.

The limits of a culture of tropical plants are therefore not alone governed by the degree north or south and the height above the sea, but also, and in a greater measure too, by the local position and circumstances of the land in question. In our case, latitude and degree, as well as the local position and the many favourable circumstances which I shall name later, justify us to say *that we can grow cocoa with every success.*

There are (besides other smaller) three prominent positions magnificently suitable for the culture of the cocoa-trees down here, namely,

¹ This is a translation from the original.

two broad valleys, one on the property of the Thabina Farming Association, Limited, and the other on the Plange Altenroxel's Block. These sheltered valleys, with an area of about 2000 morgen, are situated on the east slopes of the grandly wooded Woodbush Mountains. They have a river flowing through them, are warm, and have an almost constant humidity and a splendidly composed rich soil. Every essential point is present. A third position for cocoa culture is to be found on the northern portion of your new application. The average yearly temperature in our parts fully satisfies the demands of the cocoa-tree in this respect.

The moisture of the air, which is vital for the cultivation of cocoa, is firstly provided through the nearness (especially in the case of the two valleys mentioned above) of the immense Woodbush forests, and the presence of the rivers and the sheltered positions, &c. ; and secondly, can be produced and increased by artificial irrigation, which can be exercised to any extent.

The rainfall must be great and it is so here, but as said just before it can be assisted by irrigation. A cocoa plantation wants the rainfall fairly equally divided over the whole year, but again, in this respect, our special climate is most favourable, as the rainless season in these parts generally only lasts for four to six weeks. Again the artificial irrigation could help out in extraordinary cases. It must be distinctly understood that an abundant supply of water is at our disposal, and only where this is the case, providing the other circumstances are favourable, cocoa culture is possible.

The cocoa-tree will not thrive (not to speak of bearing fruit) in a hot, dry position with a scarce water supply, a drought of five months will kill it. Our position further is storm free ; this is of utmost importance, as otherwise the fruit is beaten down unripe. As regards the soil, we can offer the cocoa-tree the very best possible—*deep, rich, and most favourably composed*.

Plenty of lime is wanted and readily found in high percentages. Lime forms the most important factor in cocoa soils. Abundance of iron is there to make the beans red and *highly valuable*. Our soil contains the absolute necessary light percentage of phosphoric acid. Even the subsoil, as proved by an analysis, is richer than the topsoil in this highly valuable plant food for the cocoa-tree. Alkali, magnesia, sulphuric acid, &c., are found in the soil in sufficient quantities. I think I have now brought to view the main points which are essential to a successful culture of cocoa, they are all most favourable. I will mention that I am of opinion that the trees will start to bear here in their third or fourth year, whereas in other cocoa-producing countries they only begin to give crops in the sixth and seventh year.—I am, yours truly,

(Signed)

H. S. ALTENROXEL,
Manager Thabina Farm Assoc., Ltd.

(Signed)

COUR. PLANGE,
Westfalia Tobacco Plantations.

WESTFALIA TOBACCO PLANTATIONS.

CLIMATE OF THE LOW COUNTRY.

The following notes on the climate of the low country by H. S. Altenroxel have the great value of being statements based on actual test and experience. They refer, it is true, to a particular locality on the Groot Letaba River, but they may be taken as applicable to the greater part of the Transvaal low veld, only a few swampy uninhabited places excepted.

KRABBEPONTEIN, 31st December 1898.¹

Ward Onderveld, District Zoutpansberg, Z.A.R.

The climate of the low country, especially the locality bordered on the west by the Woodbush Mountains, on the south by the Drakensberg, on the east by the Murchison range of the Selati Goldfields, and on the north by Majatje's Mount.

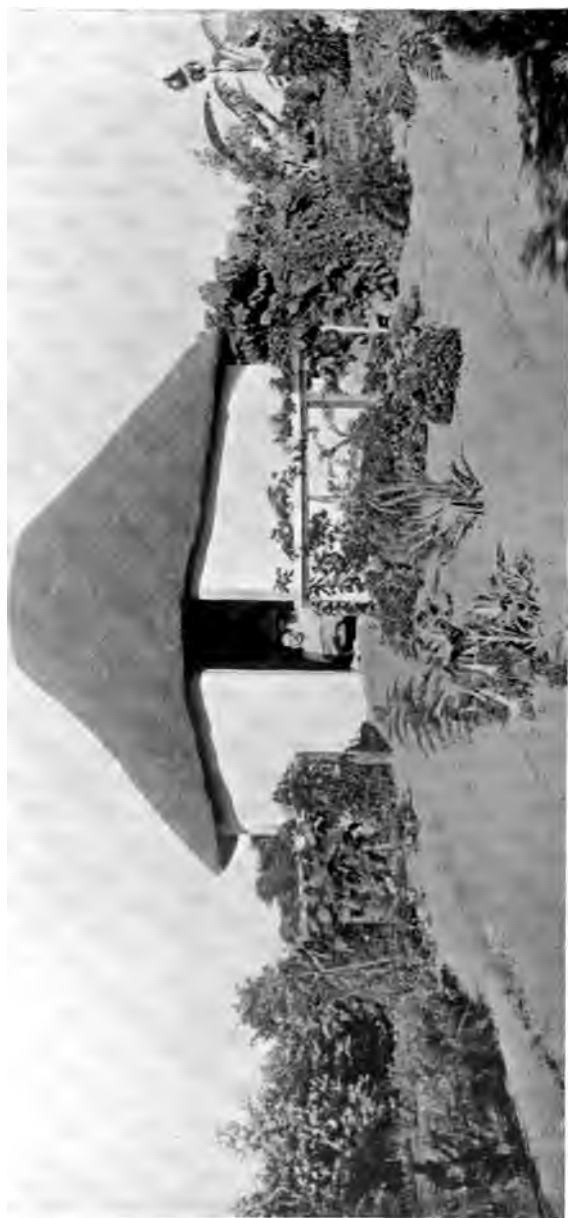
When the Selati Goldfields were in full swing in 1889–1893 hundreds of people came down to the low country and lived there for shorter or longer periods. As is generally the case in newly opened goldfields, accommodation, good houses, food-stuffs, and medicines, &c., were unknown things. The life was rough and ready, and many of the newcomers, especially the miners, indulged in drinking hard, and that on bad spirits, and lived in absolute disregard of bodily welfare.

So it was also on the Murchison range, and the consequence was that a score or so of men died—died, of course, of fever. Now the fact cannot be denied that the low country with an elevation of 2000 to 2500 feet is not fever free; but I and every inhabitant of these fields will readily state that the same is of very mild character, and with a little care *not in the least dangerous*.

Poor Jack and Tom So-and-So were found dead or dying in their rondavels²; for the outside public, victims of malaria, but the more initiated knew that they had been on the “spree” for some time, had not been eating anything for days; and last, not least, had been sleeping outside in the rain. Perhaps a little fever did the rest, but what wonder? Anyhow, such

¹ Translated.

² Rondavel = hut (see illustration).



RONDAVEL- HUT USED IN THE LOW COUNTRY

cases were fit to give the fields a bad name. Having myself been an inhabitant of the low country for the *last ten years*, I had good opportunity to learn that *the word "unhealthy" applied to the low country is absolutely unjust and unfair.*

After 1893, when the building of the Selati railway proved to be a failure, a good many people left, but many settled down, built solid houses, and are now living with their families a comfortable life.

The truth of the fact that fever abates with settlement is well demonstrated by the district of Barberton, where fever is now unknown, and where fifteen years ago hardly anybody could live. With our low country, as just said, *we experience the same.* It is not to be called an unhealthy fever country, and it is time that the public should know this. In 1893 my partner, C. Plange, and myself left Thabina and started farming on a larger scale, some twenty-five miles to the north-west, between the Letaba, Politzy, Waterval, and Vaalwater rivers. Although our new situation has a couple of hundred feet more elevation, it is all the same really tropical, as otherwise the coffee, sugar, tea, tobacco, &c., plantations of the now well-known Thabina Farming Association, Limited, and other agricultural undertakings down here could not flourish as they do.

We are now five years on the farms, with, more or less, twelve to fifteen white assistants, and have up to this day not lost one life through fever or any other sickness.

This fact should give a solid bottom to my statements which I assert here along with other inhabitants of these parts. The before-named river territory has proved to be specially suitable for tropical agricultural undertakings, and has begun to draw attention. Being in the neighbourhood of the different low country goldfields, which have, as above explained, not yet cleared their fame as regards the nature of the climate, the plantation area, in spite of proof to the contrary, is in danger of being classed unhealthy. In consideration of the great future which is in store for this part of the country, *the interested parties and inhabitants are determined to declare herewith openly that the climate of the districts here described is fit for Europeans to live and settle*

down in. Good initial proof of this statement is provided in the fact that in the last five to eight years some fifty Europeans, partly with their families, have settled down here, and are quietly but surely colonising this extremely fertile valley. It must also be mentioned that some *fifty South African farmers with their families have settled down on the area in question, or in the neighbourhood.*

The writer, who has been continually on the farms, with his men, for five years, winter and summer, is, together with his staff, enjoying fine health, although the farming life is the most exposed one possible. Daily bathing in the open rivers, exercise from the hard work done (which keeps the pores of the skin well open through perspiring), good food—mostly of a vegetable character—little spirits, and living in suitable cool houses; these are our recommendations, and they must be followed by those who intend to live and settle in a tropical or semi-tropical climate. Advantage further must be taken of the assistance nature gives us at hand towards exterminating the few possible fever germs. One of the first and finest things—without taking the profit value into consideration—is the cultivation of gum or eucalyptus trees. The strong and fresh odour which the leaves of this species of trees sends forth cleanses the air of fever germs. Certain wild plants, again, especially fit for propagating foul air, must be extinguished. “Vleis”¹ have to be drained for the sake of improving the health character of the country and to make use of their very rich soil. Science, practical knowledge, and common sense must go hand in hand, and the word “fever” will soon be unknown in these parts.

(Signed) H. S. ALTENROXEL, Manager, Thabina Farm
Assoc., Ltd.

To H. W. SCHNEIDER, Esq.,
Box 736, Pretoria.

The foregoing is corroborated by forty-seven residents who sign their names as follows :—

Vlei = swamp.

COUR. PLANGE,	{ Westfalia Plantations Company.	T. A. GEYER.
F. S. ALTENROXEL,		M. C. J. VAN SCHALKWYK.
W. J. VILJOEN, V.C., Veldcornet wyk Onderveld, H.S.A. (Veld Cornet Ward Onderveld).		M. C. J. VAN SCHALKWYK.
J. A. T. EGEN.		J. H. DE BEER.
J. H. DE BEER.		H. F. DE BEER.
M. J. KELDER.		W. A. DE BEER.
T. T. J. THERON.		P. J. SCHEEPERS.
M. J. F. KELDER.		F. H. D. GROOME.
F. J. BOTHA.		JAN. C. VILJOEN.
W. VAN REENAN.		EMIL E. EGEN.
A. C. BOTHA.		P. J. VILJOEN.
H. P. PRINSLOO.		J. J. VILJOEN.
F. J. BOTHA.		W. H. VILJOEN, Jun.
A. R. ALBERTS.		FRANZ RASSAU.
A. MEYER.		JOS. MESSING.
W. J. VILJOEN.		W. BREWER.
C. O. BOTHA.		A. WINTERBERG.
A. P. PRINSLOO.		FELIX VERHOEVEN.
J. S. THERON.		B. S. ALTENROXEL.
R. J. VAN ROOYEN.		WILLY VERHOEVEN.
C. STRANDBERG.		HUBERT GASSEL.
N. G. P. BOTHA.		ARNOLD VERHOEVEN.
		K. JOSEPH DERKSEN.
		J. P. MALHERBE.
		OSCAR OLSEN.

In the concluding paragraph of his report Mr. Altenroxel strikingly agrees with the opinions set forth in a paper on "A School of Tropical Medicine," by Dr. Manson, medical adviser to the Colonial Office, read on March 13, 1900, before the Fellows of the Royal Colonial Institute.¹ In this most valuable and interesting paper Dr. Manson describes the advances that have been made in the study of malarial fever, and states the practical certainty that its propagation is effected by certain species of mosquitoes.

"Fortunately for mankind," says Dr. Manson, "only a limited number of species (of mosquitoes) are effective transmitters of the malarial germ. It so happens that the malarial germ after it has been ingested by the mosquito has to leave the insect's stomach, pass into its tissues, undergo many evolutionary changes there, and finally find its way to the poison gland of the insect, and so to the human body when the mosquito proceeds to make its next meal on a human victim. . . .

"It injects the transformed parasite in the droplet of venom which it emits through its proboscis every time it bites a man. . . . Fortunately the malarial germ will not thrive and pass through the changes I have indicated in every kind of mosquito therefore it is

¹ *Proceedings Royal Colonial Institute*, vol. xxxi. pp. 185, 186.

that only certain species are dangerous, and only such individual insects of these particular species as have previously fed on human blood which at the time contained malaria parasites. Happily, the distribution of these dangerous kinds of mosquito is limited.

"Still I fancy I hear objections. Some are saying, 'There is plenty, or used to be plenty of malaria in England, in the fen country, for example, but there are no mosquitoes in England. If the mosquitoes be the transmitter of malaria, how explain our English malaria?' This objection I meet with a flat contradiction. There are plenty of mosquitoes in England, at least seven kinds, only in England they are called 'gnats.'

"Again I hear: 'How, if there are mosquitoes, or gnats, in England, and mosquitoes be the cause of malaria, how account for the fact that in recent years indigenous malaria has disappeared from the land?' There is probably a combination of reasons for this. In the first place, in consequence of improvements in agriculture and extensive drainage, the breeding-places of the mosquito, that is to say, stagnant pools, are fewer and more restricted in area than formerly; consequently, mosquitoes are fewer, and the chance of being bitten by them is correspondingly diminished. In the second place, because of the cheapening of quinine, and the increased appreciation of the value and use of this drug, there are fewer malarial subjects for mosquitoes to draw germs from. Quinine kills the germ as surely as arsenic kills the rat. By these two means—drainage and the extended use of quinine—the tide has been turned against the malarial germ in England, and it has gradually disappeared from the country, just as the wolf and the wild boar have disappeared.

"See now what dominion this knowledge of the malaria germ gives us over the disease. We have it in our power absolutely to avert malaria, and this we can do in many ways, founding our methods on our knowledge of the habits of the germ and of the transmitter of the germ—that is, the mosquito. As of old, we can kill the germ in the human host by quinine. 'This is nothing new,' you may say. True, but the appreciation of its importance as regards the spread of malaria is new. We now know that malaria is a communicable, a catching disease; and we now know, what we did not formerly believe, that a malarial patient is a source of danger to his neighbours. It is therefore of importance to give quinine to the malarial patient; not for his own sake merely, but for the sake of his neighbour as well, to whom he is a continual source of danger through the mosquitoes that may feed upon him, and so transmit his germs. Malaria could be stamped out in a community by all-round free drugging with quinine. After a month or two the supply of infected blood would have come to an end, and consequently there would be no more infected mosquitoes. That is one way of exterminating malaria. Another is to cause all malarials to sleep under mosquito nets, or in mosquito houses. The mode of

action of this method would be practically the same as the former. Mosquitoes could not become infected; their bites would be harmless. A third method is to cause the uninfected to live in mosquito-proof houses and sleep in mosquito-proof beds. By so doing they could not become infected, and the parasites would tend to die out for want of fresh hosts. A fourth way is to kill by different kinds of culicicides all mosquitoes entering the house. A fifth method is to destroy the mosquito larvæ before they reach maturity and the biting stage. This can be done by drainage, or by poisoning the mosquito pools. Lastly, malaria may be stamped out by the combined application of all these methods; and it is probable that such a combination will be the method adopted in the future, so soon as the public have been educated up to the point of wishing for, of paying for, and of applying the means of protection science has now placed at their disposal.

"Our existing knowledge of the causes of some of the other tropical diseases I enumerated is almost, if not quite, as complete as that of which we can boast of in the case of malaria. My time will not permit of my taking similar stock of our knowledge of those other diseases. Unfortunately, there are still not a few of whose causes we are as yet in ignorance, and which, in consequence of this ignorance, we are absolutely powerless to prevent or to cure. But it must not be concluded from this that the lacking knowledge is unattainable. Let us take heart from the history of the progress of our knowledge of malaria. It is only twenty years since the malaria germ was discovered, only two years since the action of the mosquito in transmitting the germ was revealed. When full knowledge of the causes and modes of propagation of these other tropical diseases does come, we will get with this knowledge, sooner or later, the power that knowledge confers."

IRRIGATION.

It has been explained how the rivers of the Transvaal take their rise for the most part in the beds of cavernous limestone, which occupy positions on or near the watersheds of the country, and that, consequently, the rivers, unlike those of the Cape Colony, are perennial. Advantage has been taken of this fact for years past by the Boer farmers, who have laid out irrigated lands along the lower stretches of the rivers, and have been successful in raising large crops from the rich alluvial soil existing in these localities. These irrigation works are run on the simplest lines; the water is led on to the surface of the land, and allowed to drain through at the lower end, and the surplus finds its way back

to the stream. This system tends to the gradual impoverishment of the soil, and some of the lands which have grown crops for years without manure, now yield unsatisfactory results. Even on these lands already irrigated, many improvements could be made on the working methods; but irrigation could be greatly extended. Not one-quarter of the available water supply is at present being used. Take, for instance, the country between Pretoria and Rustenburg, which consists of a series of long valleys, with soil probably the richest in the Colony. To the south there is the long stretch of limestone formation marked on the maps, "Kalkheuvel," or "Limestone Hills." This limestone is situated practically on the top basin of the Witwatersberg, at an altitude of several hundred feet above the valleys to the north. It lies, so to speak, in a trough at the top of the watershed, and is held within containing walls of slate and quartzite. As has already been stated, the water supply of Pretoria is derived from one of the fountains arising in this limestone. Formerly the fountain supplied only 500,000 gallons in twenty-four hours, but a few years back the Pretoria Waterworks Company opened up the fountain, and it now yields a daily supply of 1,250,000 gallons, and that without diminishing in any way the water from the other adjacent fountains which supply the Aapies River. These supply 7,000,000 gallons to the river every twenty-four hours. Along the southern face of the Witwatersberg similar increased supplies could be tapped, certainly enough to double or treble the present area of irrigated lands in the valleys below. On the south of the Witwatersrand watershed supplies of water from similar sources are available. Johannesburg is now supplied with 2,000,000 gallons daily from the farm Zuurbekom, which, until the present works were established, had no running water on it. This supply is obtained at a comparatively trifling cost for pumping, and if it were only a case of raising the water sufficiently high for irrigation on the lands to the south, the cost per acre would be inappreciable. As this waterholding dolomite extends over great areas of the country, the question of water supply is an easy one; the water is abundant and it

only requires to be utilised. The water contains a considerable quantity of carbonate of lime, useful in neutralising any excess of alkali in the soil.

Towards the end of 1901 Mr. Willcocks, at the invitation of the High Commissioner, paid a visit of inspection to South Africa; and, as an expert who has had twelve years' work with the Indian Irrigation Department, and subsequently eighteen with that of the Egyptian Government, his views are endowed with the greatest authority. Mr. Willcocks regards irrigation as a preliminary to successful agriculture in South Africa, and in his phrase, that "the exhaustion of the mines will plunge the whole country into conditions of poverty which no statesman can contemplate without dismay," adds point and consequence to the necessity of establishing the future of the country on some other basis than that of gold.

It is suggested that "the mining companies should be compelled to devote a percentage of their gains to the purposes of irrigation works, on lines laid down by the Government. They would assist in the permanent development of the country, and would be investing in new works which, though slow to give remuneration, would at any rate be absolutely permanent." On this particular question there may well be some divergence of opinion, but the suggestion is certainly worthy of earnest consideration.

As to the results of a comprehensive scheme of irrigation, Mr. Willcocks says, "South Africa, with an additional 3,000,000 acres of perennially irrigated land, gained at an expenditure of £30,000,000 and valued at £100,000,000, and also with 10,000,000 acres of land under crops depending on rainfall, which might be valued at another £100,000,000, would be a very different country from that which it is to-day." The 3,000,000 irrigated acres Mr. Willcocks roughly divides as follows: Cape Colony, 1,000,000 acres; Orange River Colony, 750,000 acres; and the Transvaal, 1,500,000 acres, of which 500,000 acres would be "in the high-lying regions, where Europeans can live and work," and 1,000,000 acres in the low tracts, which might be thrown open to our British-Indian fellow subjects.

Mr. Willcocks points out that in the three colonies "when rain is wanted, it is generally not there ; when it is not wanted, it is invariably present. For countries so situated the only possible means of development lie in the storage of water when it is present and not needed, and its utilisation by irrigation when it is needed. Agriculture without irrigation is generally impossible in the new colonies. . . . The first step must be to proclaim the countries as arid or semi-arid regions, and legislate accordingly." The Government expert is decidedly in favour of irrigation works being undertaken by the State rather than by individuals and concessionnaire companies. Any expenditure incurred would bring in a handsome direct return, as it does in India. The indirect gain would be considerable, and a uniform rate of £1 per acre per annum for perennial irrigation would enable extensive projects to be undertaken everywhere.

The concluding portion of the report contains the following interesting views and statements :—

"In about four-fifths of the Cape Colony, and in one-half of the Orange River Colony, no crops can be grown without irrigation if there is to be any certainty of reaping a harvest. In one-fifth of the Cape Colony, half the Orange River Colony, and two-thirds of the Transvaal, Indian corn, potatoes, roots generally, and pumpkins, for feeding stock in winter, can be grown with the aid of the rainfall, and matured in all but years of heavy drought. In these more favoured tracts an intelligent application of crop rotations, suitable manures, and good tillage would do much for the country, and in ten years out of eleven suffice for an agricultural development of no mean value, especially if taken in conjunction with stock-breeding, which will always be the principal industry of the country. But even in such tracts, the unfailing recurrence of famine in India has taught us that in countries where the rainfall is by nature tropical, and confined in great part to a few months of the year, there is no insurance other than perennial irrigation. If such is the case in the best-favoured parts of South Africa, what shall we say of the rest of the country, when year after year millions of cubic feet of water roll away uselessly to the sea? The water comes when it is of no value, and is absent when it would be worth untold gold.

"The extraordinary fertility of all those localities in which Nature has provided springs of perennial water, and where the farmers have been able to utilise it, in spite of the laws, which are as harassing as they are ridiculous, points the way to the true road

where lies the permanent regeneration of South Africa. We have only to imitate Nature, and impound on the surface of the ground the same water which she stores in caverns and fissures, and we have put the permanent prosperity of the country on a sound basis. The Kenilworth oasis, within a few miles of Kimberley, irrigated by the refuse water of the diamond mines, is a sure guarantee of what even inferior water can do with the rich soil and climate of South Africa."

The value of irrigated land near Pretoria varies from £20 to £75 per morgen, and some of the market-gardens gave splendid annual returns. Besides the ordinary irrigation work done by the Boers on their individual farms, private enterprise had already begun before the War to take up larger schemes.

One of these was undertaken by Mr. Christopher Rigg. The plan was to take out water from the Vaal River at a point near Klerksdorp, and lead it by means of a furrow to a large alluvial flat some miles below. Mr. Rigg had completed about one-half of the work when the War began, and in common with other British subjects he had to get away to British territory. The inauguration of the work was greatly hampered by the necessity of obtaining the consent of the owners of the ground over which the water had to be led. This is a large scheme and will cost many thousands of pounds, but when finished it should yield a splendid return on the capital and energy expended. Another less costly but equally promising scheme is that of General Schoeman on his farm of Schoeman's Rust. The plan adopted here is the damming of the Crocodile River where it passes through a narrow poort.¹ The work has been done at comparatively trifling cost, and the result is a dam or lake on which one could sail a yacht. By this work an extensive area of rich grain-growing land has been irrigated. Before the War the place was offered to the Government for £25,000, the idea being that it should be made into a settlement for poor burghers,² but the price was considered to be too high, the Volksleden³ believing they could secure

¹ Poort = opening in a hill range.

² The agrarian question was already becoming acute under the old Government.

³ Volksleden = members of the Volksraad.

equally good places, and construct dams for themselves. There are hundreds of places in the country where similar works could be undertaken. In the Cape Colony the Smart Syndicate by the making of two dams near Britstown, one of which holds 817,747,859 gallons of water, laid 2000 morgen under irrigation. This place was recently partially destroyed by Brand's raiding commando. Besides large schemes such as these, there are thousands of places where a moderate expenditure in dam-making would secure surprising results. A successful Colonial Afrikaner resident in Klerksdorp bought a farm from a Boer about two years before the War. The Boer had been in the habit of cultivating only one or two morgen to supply his own wants, and had gradually fallen into debt. The first year the new owner made a dam at a cost of £30, and last year he sowed a field of oats. He reaped 25,000 bundles of oat hay, which he sold to the military this year on their arrival in Klerksdorp for the sum of £375. By the completion of this dam and the erection of another he expects to have enough water to raise 100,000 bundles the first year after the country is settled. Such enterprises as this are possible all over the country. The best opportunities for the larger schemes are offered by the Vaal River and its tributaries. The Schoonspruit and the Mooi River are two of these, and the district through which they flow may be considered to have been the granary of the Transvaal in the past. The water supply is practically unlimited. Then there are the rivers flowing north, the Crocodile and its tributaries, which flow down from the Witwatersberg. In the low country there are the valleys of the Komati, the Oliphants River, and the Groot and Klein Letaba, on all of which there are many places offering equally promising prospects for tropical agriculture to the farms on the Letaba described by Mr. Schneider (*ante*).

The schemes which should occupy the chief attention of the Government are large barrages on the principal rivers similar to that of Mr. Christopher Rigg on the Vaal, near Klerksdorp. The Vaal, with waters heavily laden with mud, would, if properly inspanned, perform much the same work as the Nile does in Egypt. Its waters would not only

irrigate the lands, but would at the same time provide for continual renewal of their fertility. Wherever Vaal River water is led on to the land, as, for instance, at Warrenton, in Griqualand West, the gardens grow the most astonishing crops, a small patch of a few acres being sufficient to support a man and his family. In the course of twenty years the greater part of the Vaal River valley could be made a garden with a teeming agricultural population which might in time be numbered by millions. The same could be done with the Orange River and several other of the Orange River Colony rivers. The Modder, whose name means mud, and whose characteristics are well known to our soldiers, could be put to similar use, although in the case of the Orange River Colony streams the cost of the works would be heavier owing to the depth to which the rivers have cut their channels in soft rocks of the Karoo formation.

That such works would pay can hardly admit of doubt. The enormous increase in the value of the irrigated lands over their value as ordinary veld would, in many cases, if they were sold by auction on reasonable terms, cover the whole cost of construction. Irrigated lands on the Orange River at Upington, Douglas, and other places have been sold at from £30 to £50 per acre.

LAND POLICY.

The next question is how to frame a Government policy which will encourage agriculture and irrigation, and what suitable lands are available. The Government already owns great areas. The proportionate holding of land in the Transvaal is shown in the following statement :—

Land Owned by the Government.

Surveyed or Inspected.	Area.
About 1700 farms in the Low Country—Waterberg, Zoutpansberg, and Lydenburg	2,956,630 morgen = 6,236.489 acres.
About 655 farms in the middle and high veld highly suitable for settlement	1,154,392 morgen = 2,455,766 acres.
Total	4,111,022 morgen = 8,692,255 acres.

Lands unsurveyed and uninspected in Lydenburg, Zoutpansberg, Waterberg, and Komati, &c. ¹	} About 5,000,000 morgen = 10,500,000 acres.
Total Government land about	. 19,000,000 acres.

*Land Owned by Private Owners, Boers, Uillanders, and
Land Companies.*

Surveyed or Inspected.	Area.
About 3700 farms in the Low Country—Lydenburg, Zoutpans- berg, and Waterberg }	10,000,000 morgen = 21,165,000 acres.
About 5650 farms in the middle and high veld }	14,032,655 morgen = 29,668,842 acres.
Total lands owned privately .	{ 24,032,655 morgen = 50,833,842 acres.

Of the 9350 farms owned privately, 6851 are owned by inhabitants (mostly Boers), 375 by non-residents, and 2124 by land companies. One land company, The Oceana, owns 1,038,000 acres, and another, The Transvaal Consolidated Land and Exploration, owns 3,647,000 acres. The holdings of the land companies are chiefly situated in the low country.

A detailed list of the farms and of the areas in the various districts will be found in Appendix H.

A small proportion of the Government lands are situated near the large towns of Johannesburg and Pretoria, and the capabilities of these areas should at once be inquired into and dealt with, as will be suggested in the next chapter. Then there are the existing townships with large commonages, the irrigable land of which could be largely added to, and there would be no difficulty with the present communities with regard to utilising more of the commonage lands for cultivation: the terms of their rights are, that all the commonages are the property of the Government.

The enormous areas in the low country would supply unlimited areas for tropical agriculture, and, in addition to these Government reserves, there remain the lands held privately. How to deal with these great areas privately owned must be considered, and suggestions will be made here with reference

¹ A large portion of these lands are occupied by natives, and would not be available for settlement.

to the Boer owners and the great land companies. There is no lack of land.

The difficulty is a suitable plan of bringing it within the scope of irrigation and cultivation. Irrigation in the past has been regulated by the ordinary use and wont under the Roman Dutch law, which allows riparian rights along permanent streams, the special extent of each owner's rights being arrived at by considerations of equity and length of time he has enjoyed them. Where new sources of water supply are obtained without damaging previous supplies, the owner on whose ground they are opened has the sole right to them if he likes. To establish any marked advance in irrigation enterprise, it will be necessary to give the Government further powers, not in the direction of upsetting old rights, but rather in the way of creating new ones. The Government should undertake the principal irrigation works itself.

In all great irrigating countries, such as Egypt or India, the works are constructed and the management supervised by the Government. This was the case even in the oldest civilisations. As a rule, irrigation works are too expensive to be undertaken single-handed by the individual farmer, nor can he afford the time. Only by combination is it possible to create a great agricultural country by means of irrigation.

The Government might adopt, in a limited measure, the principle of assisting private owners, a system which has been used in Scotland in regard to drainage of the land ; but there are always serious objections against advancing public money solely for assisting private enterprise, and it seems better that the Government should chiefly take up public schemes.

To this end, and for other ends as well, the following land policy is suggested.

Firstly, to adopt similar measures to those in force in Australia, New Zealand, and even in Spain, where the land question has been solved to a great extent on the principle that land is a necessity for the people, and that it cannot without danger and loss to the State be allowed to lie unworked and useless merely to suit the plans of speculators.

The laws in these countries provide that, where public policy demands it, the land may be expropriated for whatever purpose it is required. To accomplish this end a moderate but remunerative tax is first fixed on the land, according to its value. The value is arrived at between the Government appraiser and the owner, and the tax is payable on the amount declared fair. The Government has the right to buy out the land at a price 4 per cent. above the valuation on which the tax is paid. This, of course, ensures at once a fair valuation and the right to purchase. It forces landlords to use or let others use their land, as, if they derive no revenue from the land and they have large estates, the tax becomes a heavy burden. It should be applied on all lands, but discriminately, so that in case a man's estate is put to proper beneficial use, he should only have to pay, say a quarter per cent. per annum. All lands not put to proper use should be taxed double, that is, a half per cent. on the value. The old Government charges of 10s. per farm on freehold farms and 30s. on quitrent farms should be maintained. The values of the great areas of land in the low country districts are, of course, much less than those of the cultivated settled areas in the south, so that even to the large land companies the tax need not be unnecessarily severe. No other tax should be laid on the farmer except the personal tax of 18s. 6d. levied on every able-bodied man in the colony. All land and farming enterprises should be free of profit-tax, which in itself would be difficult both to assess and to collect. But farmers engaging in other business should have to pay on the profits secured thereby. The value which should form the basis of the land-tax would only be the agricultural value of the land, and the tax should not be calculated on its possible gold value, or even on its value as a likely place for a future town. If the Government buys land for irrigation, and the establishment of agricultural settlements and other purposes connected with land industry, the contingent gold or mineral benefits should be left in possession of the owners, to be dealt with under the provisions of the Gold Law.

Village Communities.

But it would be unnecessary for the Government to undertake much buying of land for the establishment of land industries. The settlement of agricultural communities could, to a great extent, be brought about automatically by applying, with a few alterations, the present system of townships. When a landowner thinks he has land suitable for subdivision into gardening lots or smaller or larger farming lots, and is desirous of doing so, he applies to Government for the right to establish a township on the ground. The irrigable lands are divided into erven, and the dry veld portion remains as a commonage, each erf¹ holder having the right to graze so many head of small stock and so many head of large stock on the commonage. Under the old system the Government sometimes bought the farm outright from the owner, and then held a sale of the erven, each erf holder, in addition to the purchase price, having to pay a Government due of 5s. or 10s. per month. The Government, where it bought right out, took all the revenue. Other agreements were made, notably on townships on goldfields, whereby the owner became a partner with the Government in the revenues from the stands, the agreements varying in different cases. Here is the groundwork of a system which the Boer already understands, which, with few alterations, could be made suitable to the new conditions. The owner wishing to sell his land could lay his proposition before the Minister and Board of Agriculture, who would inquire into its suitability as regards soil, water, position, &c., for a settlement. The owner would state the price which he would be willing to take for his farm, and the terms he would allow for payment. These should be, say, one-third cash, and the balance in yearly instalments, spread over three or four years, without interest. The Government, if satisfied, would then survey the farm into suitable farming or gardening lots, each lot carrying grazing rights on the commonage of dry veld. According to size an upset price

¹ Erf = town lot.

would be fixed on each, to bring out the purchase price of the farm, and then the whole would be advertised for sale. If the lots brought higher prices than the upset prices, one half of the excess should go to the owner, and the other half to the *village community*. If on the day of the sale more than 25 per cent. of the lots remained unsold, the owner offering the property might declare the sale null and void, or he might take the remaining lots himself at upset price and fall under the conditions for the whole community; and if only 25 per cent., or any lesser proportion, remained unsold, he should be bound and required to do this. If any purchaser of a lot, after paying his first instalment, should fall into arrears and be unable to pay, his lot should be advertised for one or two months; if he had not paid by the day of advertised sale, his lot should be sold to the highest bidder. If it realised more than the amount still due to the owner, the excess should be refunded to the first purchaser to help to make up to him the first money paid. The purchasers of these erven should not, during the first five years after purchase, be liable to have any of their farming implements sold or their houses or other property in connection with their farming industry seized or distrained for debts on any pretext whatever. This is the principle applied in the American Homestead Acts.

The village community should be the whole body of erf or lot holders, and they should be allowed to elect a village board of management, each erf entitling to one vote, but no one individual having more than two votes. The village board of management should be recognised by the Government as a corporate body, and should have full charge of the management of the affairs of the community as regards water supply regulations, sanitary arrangements, levying local rates for improvements, &c., and general powers of local government. For improved water supply, or construction of dams or water-works, &c., the village board of management should prepare plans, and if strong enough financially they should have power to construct these works, and borrow money for this purpose from Government or others, and levy rates to pay interest and sinking funds.

If a village board of management considered it beneficial to construct any such works, it could lay the plans before the Government with estimates of costs, &c., and if the Government, through the Minister or Board of Agriculture, approved, the Government should advance money on the pound for pound principle to the village board of management, and thus assist in providing funds for the work. The Government should charge six per cent. interest, two per cent. being for sinking fund. In the case of large irrigation works, where it is impossible for even the combined financial resources of the local community to be able to pay half the cost, the Government, on finding the scheme one of permanent utility and advantage, should construct the works itself.

Besides the construction of dams, water-courses and other irrigation works, and the ordinary requirements of the village, such as streets, etc., village communities, through their boards of management, should be encouraged to establish village creameries, fruit-preserving works, and other industrial requirements. These, of course, could only be undertaken when the community would be rich enough to provide the necessary capital for the purpose, either out of its own funds or by borrowing on the security of its revenues. No further help should be given by the Government than that required for the initial establishment of the village, and the provision of the water supply. At the same time there should be no restriction of individual enterprise in these industrial pursuits. A number of building sites or stands should be surveyed off for each village, according to the regulations to be approved of by Government from time to time, and these should be sold in the usual manner which has prevailed in the past in both the Transvaal and Orange Free State—that is, on a system of ninety-nine years' leases subject to a monthly stand licence; half of the licence moneys should go to the Government, and the other half to the village community. At the end of the ninety-nine years the stands should revert back to the village community and to the Government jointly, and the leases should then be renewed to the holders on terms which might then appear equitable in accordance with the increased prosperity of the community. The proceeds

of all such renewals should go one-half to the Government and the other half to the village community. This system of village communities owning lands in common was practically in use under the late Free State Government. Either in the case of the stands or in the case of the gardening or farming lots with grazing rights attached, there should be no further sub-divisions permitted, and transfers should only be passed in accordance with this provision.

If it were the case that private enterprise had not established creameries or other industrial factories necessary to the community, the village board of management would then be in a position to establish them for themselves, and there can be no doubt but that such a system would be of great use, not only in stimulating production, but in improving the quality of the products. The mere fact of new progressive farming communities being established on sound economic lines would tempt both capital and labour, and with the enormous purchasing power of the mining population which would arise all over the country in addition to that great hive of industry, Johannesburg, there need be no fear of failing markets. For years to come, the agricultural production is almost certain to fall short of the requirements of the country.

In addition to the assistance afforded to village communities, the Government should encourage private irrigation schemes by granting every facility under the law for their advancement. Streams carrying sufficient water should be proclaimed available for irrigation purposes, right of access over other owners' property for the laying out of water-furrows should be made compulsory, as well as the right of using any wood or other material from the ground adjacent to the proposed works.

Where private parties or companies take up a large proposition for irrigation, and are desirous of having Government financial assistance, secured by mortgage on the property, such assistance should be available, on the pound for pound principle, after their plans have been approved of by the Government, provided that at least one-half of the irrigated land secured by such a scheme shall be offered

to settlers on similar terms as those sketched out for village communities.

On all irrigation works to which Government aid is given, the Government should stipulate that, as far as possible, unemployed farmers who have lost all their property in the War should be employed.

Features and Reforms.

In regard to Government lands, lands acquired by Government under the valuation clause of the suggested new land laws, lands falling to Government under foreclosed mortgages, and in cases where there are no heirs: in respect of all lands coming under the Government's control, a similar method of settlement to that of the village communities could be established, with any modifications which the Government might find advisable; for instance, some of the lands could be settled on the village community system, and others could be sold on easy terms to individual applicants. In all these cases the Government could make the conditions of tenure partly in respect of cash payments, and partly in respect of services to be rendered by the settlers. The Government should reserve at least one-half of their lands for settlement by special settlers who would undertake to serve the Government in performing part of the police duties of the country, and holding themselves available for military purposes whenever called upon. This subject will be more fully dealt with in the succeeding chapter on Immigration.

A final evil of the present land system of the Transvaal and its sister colony may be noted; that is, the excessive subdivision of the land brought about by the old laws of succession. On the death of the owner, the land he owned was at once divided among his heirs, the result being that in the course of a few generations it got divided up into portions too small to maintain a family in decency and comfort. As Lord Kitchener has promised the Boer people that they will be allowed to follow their ancient customs as far as possible undisturbed, it may be unwise to make any drastic alteration in the prevailing system, even although

it might be to the direct benefit of the Boers themselves ; but the laws should be altered in so far that an owner of land may, if he chooses, bequeath all his land to one or more of his family, providing for the others as he may deem advisable. If this permissive law were established, many of the more enlightened among the Boers would, no doubt, take advantage of it, and, by securing other positions for their younger children during their lifetime, they could leave the land intact to the eldest or other son as they might find just.

Another pressing question is the reform of the laws regarding the recovery of debt. Nothing has tended more to the impoverishment of the farmer and the consequent retrogression of agriculture than the credit system which prevails. The Boers are encouraged to buy far beyond their means and far beyond their requirements, and in the course of a few years many of them have to mortgage their farms to the storekeeper, and many become bankrupt. Imprisonment for debt should be absolutely abolished, as it is in Scotland, and the principle of the American Homestead Act should be adopted, which provides that neither a man's homestead nor his agricultural implements can be seized. In America it is unlawful to execute a process on goods unless 300 dollars in gold are first secured to the debtor.

CHAPTER XII

IMMIGRATION

ONE of the problems which will demand the immediate attention of the new Government is that of immigration. If it is desired to permanently connect the future people of South Africa with Great Britain in habit, language, and loyalty, no time must be lost in devising means for the settlement of people of British race in the country. Without any State interference there is bound to be an influx of a great industrial population immediately after the War, but something more is required than the immigration of artisans and workers for the mines. It will be necessary to fix strong, healthy communities on the land itself.

It must be remembered that the Boers will long retain a predominant position in regard to the land, and although as a race they have proved themselves useful settlers in their own way, the new conditions under which the country will find itself will demand the admission to agricultural enterprise of men with greater energy and resource. Mr. George Farrar, speaking at Newport Pagnell, truly remarked that an emigration scheme would be a certain insurance against war in the future. The problem of how this is to be brought about effectually is not so difficult as it may at first sight appear.

It has been shown in the last chapter that land is plentiful ; but it is not all suitable, and the greater part of that which is suitable will not be immediately available. It would be at once unfair and unwise to take any unduly hard measures against the Dutch population who may have legally forfeited their rights to their farms through non-payment of interest on loans, or in some cases the loans themselves or other dues they might owe the Government. No doubt time will

be given to all these people to enable them to gather together the scattered remnants of their fortune and commence life again with a fair prospect of pulling through successfully. There will doubtless be a number of farms forfeited on account of wrongful acts during the War, but these may also be left out of account meantime for the reason that the Government lands on the high veld and middle veld will be sufficient to provide for a fairly large colonisation scheme.¹ Later, many farms will be offered for sale whose owners have died during the War, in compliance with the Dutch law of inheritance.

Besides these Government lands there are enormous areas held by the great land companies. It should be possible for the Government to devise some plan whereby these companies would be induced to offer their lands for settlement on easy terms. This could be done through the agency of a Government Immigration Department. It could be ordered that all the areas offered to Government should be free from the land tax. The "easy" terms, which should gain this exemption from taxation, should be an extremely moderate rental for a fixed number of years ; each lease carrying with it the right of option of purchase at a fixed sum during the first year's tenure of the lease, and this sum should be made payable in three or four yearly instalments. Each proposition should first be approved by the Agricultural Department. Such exemption from the land tax could also be extended to Boer or other owners who similarly register portions of their lands with the Government Immigration Department, offering the same easy terms. The owners and land companies should be allowed to retain the contingent benefits as to minerals, and the Government should retain the same rights in the case of Crown lands. Many land companies would gladly avail themselves of this method of encouraging settlement on their lands ; the remaining portions, which they would retain for themselves, would greatly increase in value as occupation proceeded. Such a registration of lands offered for settlement should be terminable by the owner on giving three months' notice. By this means, provided the

¹ See Appendix G.

Immigration Board took care that only lands were registered which would be likely to attract suitable settlers, there is little doubt that large areas of good land would soon be available. All Government lands and all these lands offered for settlement through the Government Immigration Board should first be offered to settlers of a special class — those who would be willing to serve the Government, and more especially those who would hold themselves liable for military service. The land available for settlement, including Government lands and the lands offered by the method just described, would be of the most varied description, suitable for market-gardening, fruit-growing, agriculture, and mixed farming of agricultural and stock-raising pastoral ; and enormous areas would be suitable for the raising of tropical products.¹

SCHEME OF SETTLEMENT.

The Government should make a start immediately by compiling a list of all Government lands and having reports made on the more easily available properties by agricultural experts familiar with South African conditions. The best and most favourably situated areas should at once be surveyed into suitable lots ; lands capable of irrigation and near the towns being divided into smaller portions than those farther afield. In the case of irrigation land being divided up for village settlements, care should be taken that there is sufficient commonage land provided with each settlement to support the stock of the settlers. The area of commonage should not fall short of the proportion which expert opinion may consider necessary. Where the area of land is small it should not be divided but given out to an individual settler. As soon as a number of farms have been surveyed and the proposed settlements marked out they should be advertised in the Government Gazette, giving in each case a short description of the property, the area, and the capabilities, as also the conditions on which the land may be obtained. The conditions on which the farms should first be offered should be framed to secure certain obligations from the

¹ See Appendix G.

settler; those which were drawn up by Mr. W. P. Fraser in his proposals for the land settlement in Bechuanaland in 1895 seem to be peculiarly suitable. Mr. Fraser's proposals accompanied the report by Sir Charles Warren in that year. The principal conditions which he then proposed were as follows :—

“Each settler should be obliged to occupy his farm personally during not less than nine months in each year.

“Each settler should be obliged to assist in a civil and military sense in the maintenance of law and order, and should be liable to be called upon at any time for personal service, when he must appear with horse, saddle, bridle, rifle, and fifty rounds of ammunition, and with food for seven days.

“No substitute to be accepted except in case of sickness or any other cause deemed valid by the commanding officer, when the settler remains responsible for the actions of his substitute.

“Each settler should receive on entering upon his farm a serviceable horse, saddle, bridle, rifle, saddle-bags, accoutrements, and fifty rounds of ammunition, with one tent for each married man (settler), and one tent for each two unmarried men. These articles to be charged to the settler at a fair valuation, and the cost thereof to be registered against the grant to his farm, and to remain as a first charge upon it. The sum must be repaid to Government at the end of the term of five years, and before clear title-deeds to his land should be granted to him.

“During the first six months settlers should receive rations, married men double rations, without charge. At the end of this time rations would cease, the settler being now in a position to have obtained a first yield from the ground. Those living at an inconvenient distance should be allowed to commute for rations and to draw the cost value thereof.

“By the end of the first six months the settler must have constructed a temporary dwelling-place for himself, with shelter for horse and Kaffirs, being of suitable dimensions, and which may be of grass, reeds, iron, or canvas, such as his circumstances may afford.

“By the end of the second year the settler must have begun, and by the end of the third year must have completed, a substantial dwelling-house, properly roofed, of not less dimensions than 15 feet by 35 feet internal measurement, and of not less than 9 feet in height to the eaves. If of stone the walls must be not less than 18 inches, and if of burned brick not less than 14 inches in thickness. If constructed of iron or other materials, or in another form, the house must not be of less value than £300.”

Over and above these conditions there should be others framed according to the class of farming suitable for each

class of farms or allotments. These should secure that certain works should be done and that certain results should be obtained within a given period of time as a proof of *bonâ fide* beneficial occupation. The following general clause from Mr. Fraser's report would be specially applicable :—

“Settlers, upon assigning valid reasons, may, upon approval of the commanding officer, receive special leave of absence, for such purposes as transport riding, trading, visiting markets, and on account of unusual drought, but only at such times when their services may not be required for police and military duty.

“Settlers who have, during the first two years' occupation, received certificates from the officers appointed for the purpose, that the conditions of tenure have been complied with, and yet who, through illness, necessity of removal, or upon assigning such valid reasons as the officer commanding upon the recommendation of the inspector may accept, and may desire to remove, should be at liberty to dispose of their rights to any suitable person who may be found possessed of the necessary qualifications, and who is prepared to sign the usual conditions. Such incoming settler, upon acceptance by the officer commanding, will enter upon the rights and responsibilities of his predecessor.

“Settlers who have not fulfilled the conditions they have accepted, and who, upon a report from the inspector to that effect, it may appear are not farming in a *bonâ fide* manner, may be liable to a cancellation of their rights upon an order from the officer commanding. [This should be subject to confirmation by the administrator.—W. B.]

“The evicted settler may claim compensation for unexhausted improvements, and after a valuation thereof by the inspector, the occupation right should be put to auction and sold to the highest bidder possessing the necessary qualification, and who must conform to the conditions required of the outgoing settler.

“The evicted settler should not be entitled to receive any surplus above the valuation of unexhausted improvements which the occupation right may realise.

“Settlers who through illness, calamity, enforced absence, extra police or military duties, or from any other sources may have been unable to fulfil all the conditions of tenure laid upon them, may apply to the officer commanding for an extension of time, and the officer commanding may grant a reasonable extension of the time for fulfilment of conditions.

“Security of Tenure and Immunities.

“Upon taking possession of his farm, the settler should receive a form of grant, with conditions of occupation attached and accompanied by an inspection report, in conformity with local customs,

which documents should be registered in the usual way in the Registrar of Deeds Office, where duplicates can always be seen.

"The grant should not be subject to mortgage, bond, deed of cession, or lien, nor should it or any of the settler's animals or articles, as hereinafter specified, be subject to any form of chattel mortgage or underhand security or agreement whatever, and any such security or agreement should be invalid and have no force in law.

"For a further period of five years after the close of the first term of occupation, the farm and the homestead of each settler, together with certain of the following animals and articles, should be exempt from execution for debts incurred within and without this colony, provided only that during the second term of five years the said settler shall continue personally to occupy his farm :—

- 1 horse, rifle, saddle, accoutrements, and tent.
- 1 waggon.
- 1 cow.
- 8 oxen.
- 20 sheep and goats.
- 25 poultry.
- 4 muids of grain or meal.
- Household furniture, agricultural implements to a given maximum value.

But at any time during the second term of five years an interdict may be obtainable prohibiting the transfer or mortgage of said farm before the lapse of the full time, the said second term of five years, at which date the property should become subject to the general laws of the land."

It will be noticed that the last provisions of these regulations apply in a restricted measure the principle of the American Homestead Act. In addition to rations it would probably be advisable for the new Government to pay settlers willing to do special police duty in their various districts reduced rates of police pay for the first one or two years.

CLASS OF SETTLERS.

The next point to be considered is the class of settlers to be encouraged and the best means of encouragement. For the immediate purpose of the Government the best class of men is the same as that recommended by Mr. Fraser in 1895: "A body of men accustomed to colonial pursuits and more or less trained in colonial warfare, who

will hold land under civil and military tenure, and be at all times liable to be called upon to perform police or military service until the term of conditional tenure shall have been exchanged for a Government grant." Absolute new comers to the country should put in, if possible, a probationary period of a few months, during which they should seek employment and get accustomed to the conditions of the country. This applies even to those possessed of some capital.

The methods of encouragement and selection which Mr. Fraser recommends are :—

" To ascertain the accurate number of suitable applicants, their general character, and the nature of their resources ; always bearing in mind that the settler whose record and credit are of such a nature that he can obtain cattle or sheep upon credit, or (according to local custom) upon a share of the increase, can show a more tangible guarantee for the future welfare of the country than a man with money only.

" The aim should be :—

- " (a) To give a requisite amount of information to intending settlers in order to induce the class most desirable to make application.
- " (b) To obtain a class of settlers capable at an early date of self-government.
- " (c) To obtain men possessing stock or means, and by making the country an exporter of cattle and produce, to render it self-supporting.
- " (d) To ensure a *bona-fide* occupation of ground by the actual settler, and to check the placing of substitutes on the ground by land speculators who may have the intent of gaining possession of the ground upon the expiry of the term of tenure.
- " (e) To obtain a certificate of character (for the private information of the Immigration Board only) of every applicant, in order that the allocation of farms may be made with a view to the desired result."

In addition to these, in the case of applicants from over sea, the certificates should be signed by the officer command-

ing their former regiments or by some other civil or military authority of this country or of the country from which the applicant has come. In the case of Government land, it would in every case be advisable to grant the first 100 morgen free, with a moderate price for every additional 100 morgen. In the selection of applicants, those who fought in the War should always be granted the first chance, and as far as possible the first selection of the land. These of course include the Yeomanry, Cape Colonials, Natal, and other Colonials and time-expired men from the regular service. In other cases the preference should be given to married men and those who appear to possess the best qualities for success, not only in the way of personal suitability, but also in their possessing stock or other agricultural equipment. If some such scheme of colonisation, carefully thought out by experts who know the country and the conditions of its agricultural success, is instituted without delay, the Government will secure immediately a great number of the most valuable citizens for the new colonies, men who will in themselves form a bulwark for British civilisation, who at the beginning will save the Government the large expenditure for police which would otherwise be necessary, and who would eventually raise up a hardy, prosperous, white population which will gradually blend with the old inhabitants and secure in the Transvaal and Orange River Colonies a people closely identified in race and tradition with all that is best in the Anglo-Saxon.

Besides these settlers on land, the new Government would also do well to encourage the immigration of certain other classes by means of a limited number of assisted passages. To guide and control this system properly the Government Immigration Board should open a register where employers could register with the Government their requirements for any particular class of labour, and according as the registered requirements rose or fell, so should the Government restrict or increase the number of assisted passages which it might grant. The Government should also advertise at home the rates of pay ruling from time to time, the conditions on which assisted passages would be

given, and any other information likely to be of use to intending immigrants.¹ The conditions should be similar to those in use in the Cape Colony and Natal. The Cape Colony pays half of the third-class fare of mechanics, artisans, and skilled workmen from England and domestic servants from St. Helena.² The classes most in demand in South Africa in the past have been female domestic servants, mechanics, skilled labourers, and, if the land settlement be effected on the plan now proposed, or on other and perhaps better plans which may be thought out, there will be a considerable demand for agricultural labourers.

In Appendix K will be found a paper on Immigration in Natal by Mr. W. P. Fraser, in which there are many useful suggestions which would be equally applicable to the Transvaal and Orange River Colonies. Mr. Fraser discusses the best means of promoting immigration and securing permanent colonists of both sexes, and the difficulties that stand in the way. In the case of female domestic servants, he advocates co-operation between the Church and the Government. He gives the key-note to his paper as follows:—"I feel that our interests in South Africa are not safe unless and until some 25,000 additional Anglo-Saxons and British Colonial settlers are placed upon and identified with the land, and I perceive that many anxious questions will then settle themselves."

The Union-Castle Company's book states:—"During the six years ending December 1896, the excess of arrivals over departures at Cape Colony ports (naval and military not included) was 59,886, practically all of whom were Europeans. During 1895 some 26,000 emigrants left England for South Africa, and during 1896 the number increased to 36,000. Of these, 5751 and 11,246 respectively were foreigners from Europe. During the years 1893-96 the emigrants to South Africa have outnumbered those to Australia, and during 1895 and 1896 they exceeded the departures to British North America by 3600 and 13,250."

¹ In Appendix L will be found a list of the average wages paid to workmen in the Rand mines.

² Union-Castle Company's Guide-Book.

The only great experiment in State-aided immigration into South Africa in the past was the landing at Port Elizabeth of something over 3000 emigrants from England, who were brought out at the expense of the British Government. They were each allowed 100 acres of miserable land, but they quickly realised that their life, as proposed by the Government, meant starvation, and they pushed into the interior speedily, and began to carve out fortunes of their own. During the severe frontier wars with the Kaffirs, these men and their descendants proved themselves hardy, reliable colonists, not afraid to fight for their homes and liberties, and to-day their descendants have made the eastern province the most loyal and progressive section of the Cape Colony. The British Government, through its representatives who will form the new Government of the Transvaal, will do well to take note of the history of these eastern province settlers and devise means of securing similar and greater results without entailing the unnecessary hardships that had to be endured by these early pioneers. In the district west of Krugersdorp there are about thirty English families settled on the land. These survived the troublous times of the 1881 war, and furnish an example of successful Transvaal colonisation. They are now all prosperous, and some of them are wealthy farmers.

There will be plenty of applicants for the proposed settlements.¹ Already the Australian papers are expressing the fear that an undue number of the Volunteers whom they sent to the War will be inclined to stay in the country. They have been writing home about its magnificent agricultural and mineral resources. It is quite possible that the Australian Government will take measures to prevent any alarming exodus, but restriction or not, it is certain that there will be a great influx of new settlers from all the colonies whose sons have come to fight, and who now desire to stay. They have seen the capabilities of the land and got used to its climate and mode of life, and as with nearly all who try, they are reluctant to

¹ Reprints in pamphlet form of articles upon the subject of South African Immigration, which appeared in *South Africa*, will be found of service to intending emigrants.

leave the country. It is the same with the Yeomanry and the Reserve men sent from England ; hundreds and thousands would willingly stay if only given the opportunity.

Some criticism of capitalists has appeared in this book and more is to follow, but there are some good examples among South African millionaires. Many feel that it is their duty to put their shoulders to the wheel and help towards the settlement of the country. A group of them, it is reported, are willing to provide several millions for the purpose of bringing out emigrants, buying suitable land, and advancing them sufficient money to make a start. The settlers would have the option of purchasing the farms on which they would be settled. In the meantime they would only be asked to pay 4 per cent. on the capital expended in purchasing the land and necessary equipment. The one condition spoken of is a Government guarantee of $2\frac{1}{2}$ per cent. on the capital so employed ; of course the Government having supervision of the settlement and enjoying the services of the settlers for military defence if required.

CHAPTER XIII

THE UITLANDER PEOPLE

THE Uitlander people of the Transvaal, Uitlander no longer, have undergone more misrepresentation from friend and foe than probably any other people of the last century. After the Jameson raid, many of the people of England, and even of Cape Colony, in total ignorance of the true facts, threw the epithets cowards, money-grubs, and speculators, Judas burghers, &c., at the heads of the people of the Rand in a way which caused many to grind their teeth with rage. To this day some extremists at home seem to be under the impression that the Englishman of Johannesburg possesses every vice and lacks every virtue; that by merely traversing seven thousand miles of sea and land he changes his character irrecoverably for the worse, and begins straightway a life of selfishness and luxury; that he has neither courage nor principles. Well may South Africa cry out against this unctuous rectitude. It is fortunate that the great body of the people of England, having learned the truth, have the heart ready in sympathy for their fellows, and the mind above the narrow meanness these Pharisaic judges are never tired of showing. How many of them have risked their lives for the honour of their country? They have sat at home wailing over the unrighteousness of their people, saying to each other, "Thank God we are not like other men." They have sent out scribes with the express mission of belittling and be-smudging, against every evidence, the character of their fellow-countrymen, and unduly extolling that of their country's enemies. Nor do their South African brothers stand alone in their sin, in the eyes of these men. The soldiers of the King are slandered and vilified. Any lie that is sent home is greedily swallowed

provided it says enough of evil, and thereby fattens their heads with unctuousness.

The Boer who has fought by the side of his people manfully, even in what he may have known was a mistaken cause, is worthy of all respect. He has done his duty to his race, but as for the anti-English Englishmen who seem to hold England's enemies as their only friends, it appears that the sooner they find a country and a people more to their mind the better it will be for England.

They might try Russia or Turkey. The Transvaal at present would hardly suit them. The fighting Boers might be unkind. They apply the sjambok,¹ and apply it unmercifully, and with much less cause or justice, to the men whom they look upon as their own little Transvaalers, those who, having fought well for a year perhaps, have now given up the struggle. They sometimes even shoot them. The Boer has scant sympathy for those who are neither cold nor hot.

The truth is that the Englishmen of the Transvaal in general, and of Johannesburg and the Rand in particular, are pretty much the same as their fellow-countrymen at home, certainly no worse, and certainly with quite as much energy and industry.

The less enterprising individuals as a rule stay at home, and those useless ones who do seek a colony, either from inclination or necessity, on finding themselves stranded invariably do their best to drift back again to the old country.

Johannesburg, far from being the terrible place it has been represented to be, is perhaps as good in morals as many English manufacturing towns. Ask the ministers of religion if their churches are not well filled; ask the philanthropists and teachers if they ever appealed to the Rand public for any cause of charity or benevolence in vain. Live in the town itself, and mark the almost total absence of drunkenness on the part of the white people; drunkenness among the blacks was permitted by Paul Kruger in face of the continual protests of the whites. Look at the homes of Englishmen on the Rand, and you will find them for the

¹ Sjambok = thong of raw hide.

most part comfortable, certainly, but not luxurious. All the decencies and many of the elevating influences of life are observed and cultivated. Churches, libraries, hospitals, schools,¹ built and endowed by the Uitlander himself. Societies for the promotion of technical and scientific research are all existent and flourishing.

At night there are but few hooligans prowling around ; the people are too busy and too tired with hard work to spend much of their time in fast life. Even the millionaires, with a solitary exception here and there, live plain lives ; they come and go among the people like ordinary men, with neither pomp, nor circumstance, nor pride. A Rand millionaire thinks it no disgrace to shake the hand of a workman on his mine.

Let any who may have doubts come to Johannesburg and walk along the Rand, and see for themselves the immense engineering workshops, the headgears, the engine-rooms, the cyanide works ; see the men hard at work from seven in the morning till the sun goes down at night—no working week-days are taken for football matches there—and they will then believe that gold getting on the Rand is not done by men such as they have imagined, but by a race of workers who earn their living by the sweat of their brow, an example of industry and energy which might edify and enlighten their brother Boers, and, for that matter, some of their brother Englishmen. Mining for gold is no more sinful than making chocolate or caustic soda. Sir William Harcourt describes Mr. Healy's term for Johannesburg, the "New Jerusalem," as being of admirable wit. It is questionable both as to accuracy and taste. The Rand can compare with the great industrial centres at home ; and it presents scenes of activity similar to the shipbuilding yards of Glasgow or the ironworks of Birmingham or Sheffield. The works of the mines are monuments of industry in which any community might well feel pride. And as it is with the Rand Englishman, so it is with the Rand

¹ At the end of 1898 £100,000 had been contributed by the mines and the leading firms for the establishment of schools, and a guarantee of £19,000 a year towards their support for three years has been given by the mines. By the following June £138,000 had been received in subscriptions, and £99,002 in donations.



PHOTO BY G. W. H. BROS. JOHANNESBURG

ANGELO DRIEFONTEIN GOLD MINES
General view of battery, cyanide and surface works

American, and German, and Frenchman, and Scandinavian. The Americans as a class represent the best of the engineering skill of their country; many of them have shown their sense of the justice of the War by fighting side by side with the English soldiers. Major Seymour, a man of the greatest gifts of character and genius, gave up his life in the cause, and many others beside him.¹

The ranks of the Railway Pioneer Regiment, the working soldiers of the Rand, held many Americans; they proved their worth throughout the War as well on the field of battle as on the bridge. Many joined the Uitlander corps when they were first formed, and the Imperial Light Horse, Remington's Guides, Thorneycroft's, Bethune's, Roberts's, Kitchener's, South African Light Horse, Brabant's Colonial Division, and other regiments of scouts and guides, some of which were more than half comprised of Rand men, and all had Americans in numbers. They have shown in their ranks the unity of Uitlander feeling and the quality of Uitlander courage. Nor was this spirit confined to Englishmen and Americans; numbers of Germans, French, Swedes, and Norwegians, not so great, but still representative, played their parts as men in the War. Nor is it cause for wonder to those who know the Rand; as in peace, so in war. In peace the very work of the mines demands not only industry and skill, but courage and presence of mind in the face of constant danger. The casualty list in time of peace, notwithstanding every precaution, records three maimed or killed every day in the year.²

The merchants are keen and enterprising, and, in face of

¹ Among the prominent Rand men whom the writer recalls as having fallen or been wounded in the War are Colonels Doveton and Laing, Major Seymour, and Lieutenants Adams, Clements, G. A. Ferrand, and Gorton, all killed in action; Major Dodd died of enteric; Lieutenant Mullins injured for life, and awarded the V.C.; Colonel Wools Sampson and Major Karri Davies wounded at Wagon Hill; and there are hundreds of others personally unknown to the writer. Of those killed, referred to above, two were Americans. Lord Milner estimated in February 1901 there were 10,000 Uitlanders in the field.

² The State Mining Engineer reports that in 1898 there were 982 casualties on mines in the Transvaal, or an average of rather more than three for every working day of the year. Of the total number injured, 202 were white men, 60 being killed, 77 severely wounded, and 65 slightly wounded; 780 were Kaffirs, of whom 371 were killed, 220 were severely wounded, and 189 were slightly wounded. In 1897 the total casualties were 863.

great burdens of taxation and railway rates, they used to feed and clothe Johannesburg at as little extra cost as was possible under the circumstances.

There were two classes which were undesirable, and which attained to great but baneful influence solely in consequence of the protection afforded them by corrupt administration under the late Government; one was the class of illicit gold buyers, the other the illicit sellers of drink to natives. Many of these men rolled in luxury and openly boasted their defiance of the law. They were responsible for a great part of the crime of the district and most of the vice. They formed the majority of the residue of the population left on the Rand after war was declared; they are beginning to learn from Major O'Brien in the Court of the Military Tribunal of Johannesburg that their career is over; and it is to be hoped for the good of the community that they will seek their way of life elsewhere.

To avoid misapprehension, it is not intended to be conveyed that all the people left on the Rand when war broke out were undesirables; on the contrary, many were loyal English men and women who had to stay in the interests of their employers and others to avoid absolute ruin, and others because for one reason or another they could not go away. There were besides many foreigners of eminent respectability who stayed as subjects of neutral powers.

Besides the inhabitants of the towns, merchants, workers, and professional men, there were many Uitlanders who resided in the country districts, and carried on the business of storekeepers, tradesmen, blacksmiths, waggon builders, &c., a most useful class in the country, as were also a final class of Uitlander farmers who were gradually introducing farming in its proper sense to the country, Germans, Americans, Englishmen, Scotchmen, Irishmen, who tilled the ground for a living, sometimes with failure, owing to want of experience or bad luck in seasons or situation, but more often with pronounced success. They were set around in the country, true beacon lights of industry.

Such were the Uitlanders of the Transvaal. In the past all these people were overtaxed and unfairly taxed and

treated in political matters as inferiors. Their aims and ambitions now will be the same as they were before the War—to gain the full privileges of British freemen. It will be the duty of the new Government to advance their claims in the best and speediest manner, and to readjust taxation so that any undue burden will be a thing of the past; to so order things that full advantage may be taken of their good-will and loyalty and their industry and energy. Many of them have been totally ruined by the War; expelled at a moment's notice from their homes and scattered widecast over the world, their goods and belongings left to be plundered.

Many were supported by the funds supplied by their richer fellows of the Rand, aided by large contributions from England; but all these would not have sufficed to keep thousands from starvation had the great majority not entered the ranks and fought, thereby not only acting for the honour of their country, but at the same time gaining the wherewithal to support their families. As soon as the recent extensive recruiting for the irregular corps was announced the pressure at the coast towns was relieved.

After a year's campaigning, when the War seemed to be over, some of the irregular corps were brought in to Pretoria to receive their discharge, which they had been told would be granted to all the men who so desired. A day or two later this was revoked abruptly and with scant courtesy. The understanding all along had been that those who had fought their way up would be among the first to be allowed to return to the Rand. One corps was marched through Johannesburg and camped on the racecourse, and the men were refused leave to go and look at their homes. Even when they were discharged later, many were compelled to go to Cape Town or Durban, or the place where they enlisted. Meanwhile profits in trade and military contracts were falling to time-servers, enemies of England (this does not refer to Boers), who had remained behind and traded with the enemy.

After being promised their discharge, the irregulars felt sore when it was withheld, and a dissatisfied feeling was aroused which by a little tact could have been avoided.

Had the men been given their discharge when it was promised, after spending a month or so with their friends and looking round, and finding there was little to do, nearly every one would have returned to fight the War to a finish; this has been proved by the wiser policy since adopted. There is no lack of volunteers, nor will there ever be a lack, if the authorities only act with fairness and consideration.

Then there was the proclamation demanding payment of claim and stand licences accrued during the War. It has been shown how unfair these licences are even in ordinary times, but the exaction of payment during the War was filling up the cup of injustice.

Even the Boer Government recognised the fairness of the remission of licences and interest during the War, and provided for it by special Volksraad *besluit* (order). Instead of the undue haste to collect revenue, the military would have done well to have waited until civil government could be established, and the various circumstances duly considered. Many formerly well-to-do men of the Rand are ruined; some have been robbed to the extent of over £20,000, and all have suffered in proportion to their fortunes. It can be imagined they are not in a mood to pay up what they consider unfair demands. To keep them in the ranks, and tell them they will have to pay arrears of unfair taxes, tends to make out loyalty an unpayable proposition in South Africa. Rather should the initial policy of the new administration have been on the lines recommended in the case of the ruined Boer population.

Seeing that the country is rich enough itself to provide the necessary money, if it is properly administered, the right thing to do appears to be, to compensate loyalists adequately for what they have lost by their loyalty, and gain their hearty sympathy and support. The men who sacrificed their loyalty and saved their goods appear, so far, to have had the best of it.

When the War is over, the Imperial Government need not fear any continued hostility to the Boer on the part of the Uitlanders; they will be only too glad to forgive and forget. Many of them have intimate personal friends in the

opposite camp. At Cronje's surrender, and on many other occasions, the spectacle was often seen of Boer and Uitlander shaking hands on the field of battle, with every evidence of kindly feeling, although an hour previously they had been each doing their best to kill. This feeling can be fostered and made a great force in the ultimate settlement of the country.

The Uitlander population of the Transvaal before the War would be about 130,000, of which at least seventy-five per cent. were British, either from England or the Colonies. After the War the British population is certain to increase enormously, and in a few years' time it will not be far short of 500,000. Johannesburg will not surprise many if in ten years it alone has 500,000 inhabitants. The War has been a great advertisement. English yeomen, Australians, Canadians, New Zealanders, have been and have seen, and many will return to stay. There will be all the elements of energy, courage, and fair-mindedness which help to make a great people, and there will be no petty exclusiveness or tyranny over the Boers.

This population, above all the gold and coal, the diamonds and the corn, may be considered, despite the Little Englanders, Great Britain's greatest resource in the Transvaal.¹

¹ There is still another class of people—the Arab and Parsee traders from Bombay and elsewhere. This trading class was rapidly becoming a power in the commercial life of the Transvaal until Mr. Kruger's Government passed a law compelling them to reside outside the towns. This was one of the causes of diplomatic argument with the Imperial Government. These people will now regain their rights as British subjects. They have a civilisation almost equal to our own, and, if some of them occasionally go bankrupt under peculiar circumstances, they are, as a rule, peaceful, law-abiding citizens. There is no accusation against them of engaging in the illicit drink traffic. Many of the class of gold thieves and illicit drink sellers which Mr. Kruger's officials used to allow to flourish have far less claim to be considered *white* men than they.

CHAPTER XIV

THE BOER PEOPLE

THE extraordinary people who have been fighting against the forces of the Empire for the past two years and a half, and who have so long refused to give in, have shown in the struggle the chief characteristics of their race. They are the ultimate product of the process of evolution, which began when their ancestors first landed on the shores of Table Bay in 1652.

The story of the Boer race in South Africa has been often told. In the early days of the settlement of the Cape Peninsula the greater number of the ancestors of the Boers were held in a state of subjection by the Dutch East India Company, and only a small proportion were considered as freemen, although many of the later arrivals were of good family. The first comers were not drawn from the best strains of Dutch blood, but if they had not the finer qualities of their race, they had all its characteristic obstinacy, and they soon began to show it. They revolted against the government of the Company ; no doubt with good cause. They quarrelled among themselves, and began to wander away into the interior of the country, where they could follow their own bent without interference. They hived off from the ordinary nineteenth-century civilisation, and founded one of their own ; and as the years went by they nursed their antagonism to social cohesion until it became a fixed quality of their nature. They carried their aversion beyond dislike of mere principles, and began to be unable to live in the presence of other white men. When the British bought the country for £6,000,000 sterling and took over the government, they began to feel specially hustled in the presence of their brother Britons. And in justice it must be admitted that the hustling was not altogether imaginary.

These feelings, brought about by many special grievances, such as the emancipation and inadequate or unjust compensation for their slaves, the affair at Slagters Nek, and other contributory causes, urged them forward on the great trek. Once they had commenced the semi-nomadic life of the trek Boer, they soon lost many of the habits, customs, and ways of thought of other white races. They struck out in a divergent path which, if the world had been large enough, might have brought them where they would have eventually grown into a new, and possibly an important, branch of mankind. But the time has gone past for the successful carrying out of such a destiny, and the world is too small. The Boers who trekked from the old colony have made a strong and gallant swim against the stream for three-quarters of a century, and now they are going under in sheer obstinacy. It will only be ordinary humanity to stretch out a hand to save those who are still on the surface, and set them once more in a position of safety.

Both the virtues and the failings of the Boers have been largely induced by the struggles they had to undergo in the wilderness, where they were surrounded by uncivilised tribes and wild animals. It is doubtful whether any other white race, after going through seventy years of isolation in the interior of a half-savage country, would have even done so well in maintaining the traditions of civilisation. For long years they had hardly any teachers or ministers of religion ; at the best they only visited a town, such as it was, once in six months. When the Jameson raid took place hundreds of burghers saw a large town for the first time in their lives, as they rode victorious through the streets of Johannesburg, after Dr. Jameson was captured. Under all these disadvantages they have proved themselves a force in South Africa which the British people have only conquered at enormous sacrifice. These qualities of overcoming difficulties, of disdaining all aid, and of stubbornly pushing on their own way in the world are characteristics which many feel bound to admire.

If the Boer race were doomed to extinction it might even be a question for the philosopher and the student to ponder whether at that price the War had not cost too

much. To the practical Britisher, while even that question admits of no uncertainty, still such a price if found necessary would be matter for the deepest regret. The white races seem to be tending towards amalgamation and assimilation rather than to further disintegration and divergence, and in view of the possible competition from both the Yellow man and the Black, it is perhaps as well that it is so. Still the qualities of determination and resource which the Boer has shown, his ready adaptation to a new environment, his capacity for vigorous growth and increase, under conditions which other men nowadays refuse to accept, brings the thought that such a race, slow going but of strong vitality, is more to be welcomed in these days of feverish, energy-using life than another of greater intellectual accomplishments and less staying power.

The triumph of the head may after all be gained only at the expense of weakening the power of resistance to the natural and inevitable tendency to decadence which is manifested by all over-civilised peoples. The powerful bony frame of the Boer is not seen everywhere in the world. Some of the scenes one sees in the Transvaal in time of peace recall Sir Frederick Leighton's picture in the Royal Exchange of "Phœnicians Bartering with Ancient Britons." The Phœnicians are gone and the Britons remain. To-day perhaps the Briton might do well to cultivate some of the characteristics of the ancient type, of which the Boer is in some respects probably the closest living representation.

But the Boer is not doomed to extinction. He has only been brought back into the camp of his fellows, and a wise Government will allow him to continue his way in life, and develop the good characteristics of his race for the benefit both of himself and his fellow-men.

While the Boer has these qualities, which mankind in its present state cannot afford to disdain, he has others which give his detractors cause to speak. He seems to have a gift of twisting everything to his own particular way of vision. If facts are against him so much the worse for the facts, he can describe them in such a way that they are unrecognisable by others, who may also have been spectators. He magnifies

a small victory into a perfect slaughter of his enemies. He keeps up the courage of his fellows by force and colour of imagination. His patriotism is stronger than his oath, and although he has a certain sense of honour the code is peculiar. He is a very sophist in arguing to his own advantage, and convinces even himself in face of the most contrary evidence. He is religious in his own way, but it is the way of fatalism, based on the belief that he is of the chosen people. He is moral, but with a morality like that of many other men, in that its breaking point is found immediately it undergoes any moderate strain. He is hospitable, and it is perhaps his chief and most striking virtue. He is suspicious and cunning, but he is not revengeful nor usually cruel. Individual acts of cruelty may be recorded against him, but these are the exception and not the rule. It is true he has ruthlessly slaughtered thousands of Kaffirs, but he looks on them as of an inferior race, and the Kaffirs, on their part, were frequently cruel to him. He is not industrious, in that he leaves the cultivation of the land largely to the Kaffir, preferring himself to pursue the alternately laborious and lazy life of the transport rider. Until recent years he looked upon all innovations with suspicion; he disliked railways, and was with difficulty persuaded to allow them to be built in his country. He will fight for an imaginary independence, and give away the best of his country to speculators, provided they tickle his vanity by telling him he belongs to a great nation, owning a great country, which they are desirous of helping to develop. He is shrewd in many things, and some of his methods are fashioned after the wisdom of Solomon. There is a story of how ex-President Kruger settled a land dispute. Two burghers, whose father had died, came to him one day and said that they could not agree about the division of their land, each thought the other was getting the advantage in the matter of water and irrigated portions. The old man said he would speedily settle the business for them, if they would agree to abide by his decision. They both agreed, and he then said, "Well, Jan, you are the elder, so you must divide the land; go and divide it into two parts, and put up beacons, and then Andries, being the younger, shall have the

choice which portion he will take." The matter was thus decided in a manner which insured fairness without the aid of arbitration or law courts. The Boer, strange as it may seem in face of the prolonged strife, has little attachment to any special farm or land on account of old association, but is quite ready to leave a farm where he may have resided half a lifetime and go and seek pastures new. It is his nomadic training, and the characteristic explains why he readily sells his farm to the gold-seeker and treks into the wilderness. He was content to go on year by year on primitive lines until the demand for farms revolutionised his daily life. It gave him in the early years of the goldfields luxuries of which he had previously only dreamed about. While his habits became more luxurious his mind remained stagnant, and he lost what little ambition he may have had for the industrial development of the land. Before the War he had spent what the early gold rushes brought to him without effort, and then, accustomed to a more expensive life, he began to mortgage his farms and other belongings. He failed to understand that he and his people were going back, and he began to trek into the towns, where he found new miseries awaiting him. His own Government saw the danger, but with the same obliquity of vision which it displayed in political matters, it only made matters worse by dipping into the public purse for large grants, which were disbursed in the form of mortgages and in individual doles. The consequence of this was that when war broke out, frequently the Boer had mortgaged his farm, either to the Government or to private persons, and in some instances he had become to all intents and purposes a State pauper. The War has completed what the old Government began. The country-side is laid bare, and no crops are being grown beyond a few patches along the railway lines and round about the garrison towns. More than half of the Boer population after the War will be ruined, and the new Government is face to face with a problem which will require the most careful consideration.

In the introduction to this book it has been stated that the Boers deliberately determined to oust British civilisation from South Africa. To the inherited obstinacy of the Dutch-



BOER FARM HOUSE IN THE LOW COUNTRY

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man had been added the induced characteristics of courage, cunning, and exclusiveness of the Boer brought out by the life in the wilderness, and to both of these had been added a new force in the vitalisation of the genius of the people through the education of the younger and more brilliant sons. The young Afrikaner, with all the prejudices and semi-wild yearnings of his race, had attained, in many instances by means of English and European university education and training, to very considerable abilities, and he conceived and nourished a magnificent idea, that of utilising the powerful instincts of his people, unknown to others but known to him, to further a great ambition. The ambition was to found a great Boer people and hand down a great Afrikaner heritage. The Boer leaders, or at least those of them who are straightforward and honest, made and make no secret of this, nor need they, as it was quite a legitimate aspiration. Unfortunately the British people of South Africa stood in the way, and had to be got rid of, consequently the Young Afrikaner propaganda was launched. It began immediately after the Boer war of independence. If Mr. Gladstone and his colleagues had had the prescience of a Thiers they might have anticipated the danger; and, by nipping the ambition in the bud, have warded off disaster. But by their policy a situation of incompatibility was created from which either Briton or Boer had to retire. The Briton finally decided to stay, and the result has been the destruction of the Boer plans for the time being, and probably for ever, if he is fairly but firmly handled and saved from the usual fatal extremes of magnanimity on the part of his British conquerors.

After the first Transvaal war, the Boers preached a crusade against everything British. There were to be no English signboards, no English advertisements in Dutch papers, no English bookkeepers; no, all Dutch, said *The Patriot*. It was written that it was a disgrace to speak English, and English governesses were pests; no land was to be sold to the Englishman. The Boer was the noble and was to remain so; if he had land to sell he was enjoined to sell it to a brother Boer or Afrikaner from the Colony, but on no account to an Englishman. The Boer

was the landowner, and the "proud little Englishman" was to be "dependent on him." Trial by a jury of his own people was denied him, he had to be tried only by Boers.

The possession of the land was to be looked upon not only as a fortunate fact of which every advantage was to be taken, but it was to be jealously guarded as the exclusive inherent right of the Boer people. All Englishmen were Uitlanders and beyond the pale of Boer civilisation.

The whirligig of time brings many changes; now the mortgage bonds over a great part of the estates of his ambitious but improvident enemies have fallen to the Englishman by right of conquest. What will he do with them?

The extent to which the Boers were mortgaging their farms will be seen from the following returns given in the report of the Registrar of Deeds for 1898. The total number of properties mortgaged was 4884, and the sum of £2,181,254 was borrowed on them; besides this amount a further sum of £2,693,405 was borrowed under general mortgage of all the belongings of the borrowers. Property was therefore pledged in that year to an amount of £4,874,660. In the same year mortgages were cancelled to the amount of £2,186,607, leaving a net increase of indebtedness of £2,688,053 for the year 1898 alone. Out of the total amount the sum of £258,352 was borrowed from lenders residing outside the Transvaal. The Boers are indebted to the Government to the extent of about £750,000; £250,000 of this was given out of the Amortisation Fund—a special fund voted by the Volksraad to be loaned to poor burghers. About £400,000 is money from the Post-Office Savings Bank, representing the greater part of the balances of depositors; the remaining £100,000 is from the Orphan Chamber, and it represents the patrimony of orphans entrusted to the Government. In most cases these moneys are secured on realisable properties, and, generally speaking, the security is sufficient; some cases there may be where the property pledged is not worth much more than the amount of the bond, but these are the exception. But although the securities may be sufficient to realise the full amounts of the loans if the Government decided to call

up the bonds, still that might not be the best step to take. The Imperial Government being the creditor will, doubtless, in this case consider the welfare of its debtors, and forget its former enemies in its mindfulness of its present subjects. British principles of fairplay, reasonable magnanimity if you will, will be contrasted with the former Boer methods of arrogance and exclusion. The Imperial Government will certainly not fall into the same error that Paul Kruger fell into and make helots of the Boer people, as he tried to do with the British ; rather may the Imperial Government be expected to go to the other extreme and be unreasonably and unfairly lenient.

If the properties were sold, the result would be that a great many people would be rendered homeless for the time, and the Government in all probability would have them on its hands in some other way. The situation will probably resolve itself into this : The new Government will confirm the Volksraad Resolution of 1899, ordering the remission of interest during the period of the War ; and in cases where it seems advisable it may even decide to grant remission for periods of one or two years after the War, the interest accruing in the meantime being added to the principal. This would give all the energetic Boers a chance to gather together their scattered fortunes, and begin again to bring their homes into a condition of comfort and their farms into a state of prosperity. In cases where the Boer or his family—for the head of the house may have been killed—are in such circumstances after the War that it appears unlikely that either principal or interest can ever be paid, the Government should call up the bond and sell the property, and if it does not bring much more than the amount of the bond, the Government should buy the property and then let a part of the land to the former owner at a moderate rent with option of re-purchase, the extent let being in proportion to the reduced capabilities and resources of the lessees. The remainder of the farm, if any, should be dealt with as suggested in the chapter on the land. Of course every consideration should be taken of the period of ruin which has passed over the country ; where there is a chance of recovery, time to pay

should be granted, but where the case is hopeless, it will be the truest kindness to cut the knot and relieve the debtor of his load.

Besides lenity in respect to Government loans, it should also be made compulsory for private capitalists, consistently with fairness, to deal gently with their debtors; a Court of Adjudicature could be established to settle the limit of the time of grace in each case according to its special circumstances.

Besides these measures, the policy which Lord Kitchener foreshadowed of supplying ruined Boers with what cattle may be over at the end of the War, is a good and praiseworthy one; further, the Government might give them seed corn and help them to help themselves in every way possible. In his budget speech, April 1902, Sir Michael Hicks Beach indicated that should peace be immediately concluded, he would be disposed to provide means with a liberal hand for the resettlement and restocking of the new colonies.

If irrigation works are started on the lines suggested in the chapter on the land, employment could be found on them for many of the poorer burghers. They would also be able to profit by any scheme of land settlement on small allotments that may finally be decided on. It will be good policy to get as many as possible into the village agricultural communities, where they would be likely to profit by the example and industry of their neighbours, and they on the other hand could profit by the experience of the Boer; by each learning to know the other better they might lessen any present mutual distrust, and by gradual assimilation they might pave the way for future fusion.

Their language, religion, and customs should be left to themselves, and they should be taught the lesson which their own legislators never knew, that forbearance and kindness and trust are after all great forces in the world.

But the policy of leniency to the Boer people should not be overdone; frequently they misunderstand it and put it down to weakness. It is difficult for people in England to realise the state of mind of the Boer, but it is a fact that

after all the war, he is nearly as cocksure about his own superiority as ever, and he has no place in his mind for the greatness of England; anything got from her has been obtained by his own superior power. Therefore while it would be unwise to utterly destroy the vanquished foe by way of material ruin, or even to copy his own method of exclusion and taboo by for ever forbidding any participation in political privileges, it would be more foolish still to overdo magnanimity.

Although probably half of the Boer farmers have their land more or less mortgaged, the other half comprises some men of very great wealth. Boer millionaires are by no means unknown in the Transvaal; there are the Krugers, Bezuidenhouts, Roods, Geldenhuys, Rissiks, and many other names associated with large fortunes, and even those who have mortgaged their farms are not always poor; some of them borrowed the money to improve their properties. After the extremists have been captured and peace is declared, given that they manage to save some of their stock, and provided that they accept the situation and do their best in co-operating with the newcomer, they will soon pull themselves together.

The Boer population of the Transvaal after the War, men, women, and children, will probably number about 100,000. The surveyed and inspected farms of the Transvaal number 11,707. Of that large total the Boers own 6851, many of them of course mortgaged; the Uitlanders own 375, and the great land companies 2124, whilst the Government has retained 2355. It is evident that the Boers still are and will be for many years the predominant land-owning class, and it is only common sense that they should be made to pay a fair contribution towards the cost of the War. Anything less than this would be unfair to the loyal British population of the Transvaal, who have had greater hardships to bear than even the Boer. They were expelled and ruined by commandeering and theft of their property and deprived of their livelihood for years, and under the former Government let it be remembered that the Boers carefully planned so that nine-tenths of the taxes should fall

exclusively on the Uitlander and not on himself. Further, anything less than securing a fair contribution from the Boer would be unfair to the people of England, who year by year pay their 1s. in the pound income-tax, while, if the matter is not carefully watched, their enemies who have caused the War may get off scot-free. Of course, in view of the present ruin of the country, the contribution must at first be levied with discrimination—in some cases it might be remitted altogether to begin with—but as soon as they are able, the Boers should by means of the land-tax, assessed according to the value and extent of their lands as sketched in the chapter on the land, be made to pay equally with their fellow-citizens. If they engage in other pursuits than that of farming, then they should be subject to pay the same taxes which may be levied on others.

The extent of taxation will greatly depend on the Boer himself. If he honestly throws in his lot under the new conditions, the great police force which is supposed at present to be necessary will not be required. The best-informed opinion is that once he has given in, provided he receives fair and firm treatment, he will not attempt another war, and this will probably prove correct. If he does not give in, he must be completely disarmed. The number of rifles and guns is known, and before the prisoners are allowed to return it should be insisted upon that at least 90 per cent. be accounted for.¹

If the Boer realises the situation and manfully accepts it, if he throws off his old habits and buckles to with energy, resolved to pay his share of the burden of the war debt which has been incurred through his own ambition; with the greater part of the land in his possession, and with his experience and knowledge of the country, he should have no difficulty in maintaining an important if no longer a pre-dominant position in the country.

He need fear no oppression from the Government nor interference with his ways and customs, and his fellow-Transvaalers of British birth will bear him no grudge, but rather respect his courage and energy. If, on the other

¹ This is in accordance with Lord Roberts' proclamation.

hand, he continues a vain opposition and unduly prolongs the strife until bitterness is created on both sides, if he persists in bringing his country to desolation and his people to despair, and if when the last remnants are eventually subdued they only sulk and bemoan their self-inflicted losses, then there is only one fate for the Boer. Instead of being an equal among equals, he will become the hewer of wood and drawer of water, only a little higher, and in some cases perhaps a little lower than the Kaffirs. His fate is in his own hands ; he can still remain the landed aristocrat of the Transvaal if he will.

CHAPTER XV

THE NATIVES

THE native population of the Transvaal may be estimated to number close on three quarters of a million. There are many types of Kaffir represented, the most important being the Bechuanas, Basutos, Magatees, Shangaans, Swazi, and Zulus. The various colonies of these people are known by the names of their chiefs for the time being, such as Mapoch, Malaboch, Secocoeni, and so on. The districts they inhabit most thickly are Vryheid, the northern parts of Middelburg and Pretoria, Rustenburg, the north and west of Lydenburg, Waterberg, and Zoutpansberg; the last-named immense and partly unexplored district has over 400,000.

The Kaffirs are childish, indolent, good-tempered, and easily governed. In their natural condition and habitat they lead what is to them an ideal life of comfort and freedom from worry. The women and elder children do the work of the kraal and the field, all except ploughing, and the men spend their time lazily lying around in the sun.

A Kaffir's wealth consists, firstly, of his wives and marriageable daughters; he buys the former and sells the latter, and in all these transactions he uses cattle, his other form of wealth, as the medium of exchange.

The Kaffir's land is really the common property of the whole tribe, but as Transvaal law does not recognise the ownership of land by natives, each native location or territory is registered in the name of the superintendent of natives on behalf of the respective chief for the time being. The arable land is apportioned according to tribal custom, each man being allowed the use of a lot and common grazing rights on the remainder not so apportioned. The natives own large herds of cattle, and they are by far the greatest cultivators

of the land in the Transvaal. Many of them are very wealthy, owning cattle and corn equivalent to several thousands of pounds in value. Besides the native reserve lands, many Kaffirs squat on the farms of the Boers, where they are allowed to cultivate on the system of giving the owner half the produce of the crop ; they may also graze so many head of cattle, one of the conditions being that they must work for the Boer when required without wages or other payment. Some of these Kaffirs by industry become almost as rich as their masters, that is when they receive fair treatment and are not robbed.

Unfortunately for the reputation of the Boer people, while the majority treat their Kaffirs honestly and kindly, many isolated cases of injustice and cruelty used to occur. The circumstances of many of these cases have already been published in England, and it is unnecessary here to repeat them further than to vouch once more for the facts.

Since the beginning of 1901, in the prosecution of their guerilla warfare, the Boers have been showing increased cruelty to the natives ; there is the flogging and shooting of the man Esau at Calvinia, the cold-blooded murder of unarmed natives at Modderfontein and in the Magaliesberg, and the herding of a lot of terrified railway boys into a gravel pit at Taaibosch, when the captors amused themselves by firing over them after killing one and wounding another. These things are occurring in the light of day when the eyes of the world are on the Boers.

The chief oppression of natives in the Transvaal arose through the unprincipled character of some of the native commissioners. Extortion was practised in collection of the hut-tax, the money sometimes being refused in order that the commissioner might obtain payment in cattle, which he could credit to a Kaffir at less than half their value, and sell them afterwards at full price and pocket the difference. If the native refused, he was arrested on some trumped-up charge and unmercifully flogged. By malpractices such as these, the Kaffirs of Malaboch's and Magoeba's tribes were driven to revolt, and were slaughtered into subjection again in a manner which was little short of barbarous. On some

farms the condition of the Kaffirs was one of semi-slavery. "Boys" going to the mines were liable to be harried by the Boers, through whose farms they passed, and many were deterred from going to seek work by fear of this.

In the Transvaal natives pay 10s. a year in hut-tax ; this tax was estimated to bring in an amount of £54,863 for the year 1899, besides arrears outstanding of £24,157. Natives working in towns pay 1s. for the period of service for which they engage. In mining districts native labourers pay 2s. per month for their passes, and are liable to punishment if they are found without them. The estimated revenue from Kaffirs, other than that collected from hut-tax for 1899, was set down in the estimates at £71,208 ; in addition there were arrears outstanding of £70,577.

In June 1899 the mines of the Witwatersrand were employing 97,800 natives, or nearly 20,000 more than in the previous year, and it was estimated that another 15,000 were required to bring the force to its full complement. In addition to these natives actually employed at the mines there are great numbers employed at Johannesburg and on the Rand as house-boys, drivers, cooks, and in other domestic work. The number of these may be estimated at about 30,000, and there will be quite another 30,000 employed on mines in mining towns outside of the Rand ; so that the mining industry of the Transvaal may be calculated to give employment to a grand total of over 150,000 natives.

The wages paid on the mines vary from 1s. 3d. a day for surface labourers to 2s. 6d. a day for blacksmiths' assistants and semi-skilled labourers, the average being about 48s. per month, with food and shelter. The domestic servant Kaffir receives about £3 per month with food and lodging. The Shangaans and East Coast boys and Basutos make the best mine boys ; the Zulus prefer to remain aboveground and seek employment as domestics.

A serious difficulty is experienced in obtaining a sufficient supply of natives for the mines, and two years ago the Chamber of Mines considered the question of importing labour from other parts of Africa and from other coun-

tries. The Governors of the West Coast settlements and other States were written to, but the answers were not encouraging.

The only effective supply available appeared to be from China, but, besides the heavy cost, it was considered undesirable to import Chinese into Africa in any great numbers, and the matter was dropped, the intention being to try by better organisation and other ways to obtain a sufficiency from the Transvaal itself and from the adjacent Portuguese territories, and negotiations were entered into with the Portuguese Government, resulting in an agreement arrived at by which East Coast Kaffirs could be imported under satisfactory regulations. The cost of bringing the natives to the Rand is about 65s., including the charge of 27s. 6d. for passports made by the Portuguese Government. The hope is that by the increased use of rock drills Kaffirs may gradually be replaced on the mines by white men.

Mr. Eckstein at the Rand Mines Meeting, 1898, said :—

“We have proved that we can do by machine drills in the hands of white men much of the work which was formerly done by the natives. It is not yet entirely satisfactory, I admit, and we all acknowledge the cost, and in some other respects the unsatisfactoriness of the machine drill; but the experiment is a comparatively recent one, we are improving all the time, and I think we may reasonably look forward to the introduction of a small stope-drill, which will aid us immensely in solving our labour difficulty. The hope which I said I entertained was this—that by the development of the machine-drill we can cut down our native labour to a large extent, and in place of 50,000 or 60,000 natives, we may yet be able to do with 10,000 or 15,000 white miners. This would be a most desirable consummation.”

One of the greatest evils in respect of the government of natives has been the drink traffic. Not only did the vile stuff supplied in the name of brandy cause 25 per cent. of natives to be continually unfit for work, but it permanently ruined their constitution and caused many of them to die. Wherever the illicit liquor dens existed, mobs of drink-sodden natives gathered yelling and gesticulating, not in twos and threes, but in hundreds, and even thousands. Right along the Reef the trade flourished; around Marshall Square in the

heart of Johannesburg itself, on Sunday afternoons it was a common sight to see the Kaffirs filing in through the labyrinth of passages with galvanised iron walls, with which the vendors of illicit liquor surrounded their premises, and a constant stream filing out on the other side into the next street, where some lay around, others fought and swore with sticks in the air and eyes aflame, requiring only a spark to set them into a fierce and brutal general fight. Regular stand-up battles were every now and then taking place, not single hand encounters, but opposing forces of from 500 to 1000 men a-side, in which kerries, stones, and any handy weapons were used, the frequent result being that several would be seriously wounded and occasionally one or two killed. These disgraceful scenes took place in the full light of day, the police being carefully and conspicuously absent.

The evil grew until it became a grave national scandal, and mainly owing to the action of the *Transvaal Leader* in publishing a series of special articles, public indignation on the subject was aroused. The *modus operandi* in the crusade was this: The assistant editor and others of the staff, armed with revolvers, made sudden raids into the dens, pushing open the doors and rushing through the passages, in some cases managing to get right to the centre before the cellars were locked up; in those cases they smashed all the bottles and let the drink run out: they would find, as a rule, that the proprietors had made themselves scarce. On many occasions they were anticipated; some of the places were protected by pickets; men were stationed to watch, and at the slightest sign of danger a button was pressed and the warning conveyed by electric bell. Of course the *Leader* raids were illegal, but no action was taken against the paper, and it did good. The articles roused public opinion, both Uitlander and Boer, and a deputation of the Dutch Reformed clergy waited on the President on the Queen's Birthday 1899, and urged him to put an end to the traffic. But the Government were by this time almost powerless in the matter. The following extract¹ from a letter from the State

¹ Chamber of Mines, p. 103. Extract of a letter from the State Attorney to the Chamber of Mines, 14th April 1898.

Attorney to the Chamber of Mines will show the position as it existed in 1898 ; it refers to a Liquor Commission appointed by the Government to inquire and suggest a remedy :—

“The Commission is of opinion that a moderate use of drink by the natives, under the control of or on behalf of the Government and mine managers, must in every way effect an improvement.

“The native will be able to obtain at a much less price, and, without any fear, a limited quantity of drink of a much better quality. This will guard the native against drunkenness ; he will remain fitted for his work, and, moreover, trade in general will be benefited, as the native must now pay such high prices for drink that he has little or nothing left over with which to purchase other articles, such as clothing, &c.

“The great profit that is derived from the illicit sale of drink renders the Government *almost powerless to uphold the law*. According to information supplied to the Commission, there are syndicates formed which have their branches everywhere, and which must truly be regarded as the purveyors of drink, while the persons who sell are hired by the former under contract, and obtain compensation if they are sentenced under the law.”

To this letter the Chamber of Mines replied ¹ :—

1. “That strong drink is by no means indispensable to natives, as is shown at De Beers, and in Bechuanaland and Basutoland, as well as in other parts of South Africa.

2. “That experience has proved that addiction to strong drink causes the deterioration of the natives, physically and morally.”

The *South African Mining Journal* commented :—

“At the same time the Government seems to have cast a lustful glance upon the profits of the illicit liquor trade ; upon the commission won by complaisance by police and other officials, upon the immense profits earned by the vendor of hell-fire-water, tanglefoot, blue ruin, and other concoctions that sap the Kaffir's strength and delete his brain power. At the suggestion (we gather) of the inevitable Messrs. Lewis and Marks, the trade is to be elevated into a Government monopoly. One remembers the parable of the man from whom the devil was cast out and there entered into him seven worse than himself. A Government monopoly, farmed and sublet, in league with the police, or acting in collusion with the present vendor class ! The prospect is too terrible. No doubt a Kaffir drink monopoly will one day become a corner-stone of the State's

¹ Chamber of Mines, p. 105. Letter from Chamber of Mines to State Attorney 20th April 1898.

independence. Then the supporters of the Transvaal coat-of-arms should be a dynamite monopoly erect and rampant, and a drunken—a very drunken—Kaffir.”

Any one who lived in Johannesburg and saw what was going on would find it difficult to arrive at any other conclusion than that the officials were to blame, and that the traffic under a pure and energetic administration would have been impossible.

But about the remedy, it seems perfectly evident that the only thing to do is to entirely prohibit the sale of spirits to natives. If the Kaffirs want drink, let them have it in their own way and of their own kind, that is, Kaffir beer. This is the natural drink of the Kaffir; besides being only mildly intoxicating, it is nourishing and health-giving, and leaves no bad after effects. The boys get fat on it. If they do take too much, unlike raw spirit which drives them mad, Kaffir beer only sends them to sleep, and they wake in the morning fresh and ready for work. Mr. Loxton, compound manager at the New Goch Mine, states that when he took over the compound of that mine from 25 to 30 per cent. of the natives were habitually unfit for work from drunkenness, and in the compound thirty of the boys were suffering from scurvy. He immediately allowed the boys to brew and drink Kaffir beer, with the result that in three months twenty-five of the boys sick with scurvy had recovered, and the percentage of boys fit for duty every month rose from 75 to 80 per cent. This was while the old drink traffic was still flourishing, and it shows that if the native is allowed his natural intoxicant the desire for the more ardent spirit is greatly modified.

To make prohibition effective is the difficulty. One way is to forbid, under severe penalties, any sale of spirits to natives. This was the law in the Orange Free State, and it is the law in Bechuanaland and Basutoland, and in these countries it works well.

It should be tried in the Transvaal, and if it proves a failure, then the only other remedy seems to be the closed compound system. A good deal can be said in favour of this system. The native employees of De Beers are the

happiest and best treated Kaffirs in South Africa, and as a consequence the De Beers Company is never short of native labour. A writer in the *Daily Telegraph* wrote in 1900 as follows :—

“At any rate, the employees of De Beers are not allowed to get drunk. The doors of the compound open outwards ; the native can leave it if he likes, but except at the conclusion of his contract, he leaves it not to return to his master and easy employment. Mr. Merriman once failed of success at Kimberley, I believe, but he was not there long enough to write on the outside of the compound ‘*vestigia nulla retrorsum.*’ But the corrugated iron walls do not make a prison for the natives, nor the barbed wire fencing a cage in the accepted sense of the word. Happier people I have never seen, or better contented, as indeed they well may be. They are fed and clad cheaply, to their own taste, they save money, and are saved from themselves. The compound system, as organised at Kimberley, combines all the privileges of freedom—save that of getting drunk—with that absence of responsibility which is the compensation of the slave.”

The great objection to the compound system comes from the mercantile community. On the mines of the Rand alone in 1898 the wages paid for Kaffir labour amounted to £2,069,129. This represents a very great purchasing power, and means a large trade, and if it were placed directly in the hands of the companies, as at De Beers, it would be a distinct loss. The objection is a sound and reasonable one ; but the illicit drink traffic must be stopped, and the mercantile class should in their own interest do all in their power to make prohibition effective ; otherwise the question of compounds in some modified form restricting any trading on the part of the companies is bound to crop up. The suppression of the illicit liquor traffic would almost certainly solve the native labour question on the mines. As soon as the chiefs found that their young men were not being destroyed by drink, but were well cared for and returned home fat and prosperous, they would send them in ever-increasing numbers to work. The mines would also gain directly by having the full complement of “boys” daily at work instead of losing continually to the extent of 25 per cent. as formerly.

The general principles of the treatment of Kaffirs in the

Transvaal is good. No equality is admitted as between white and black, except that both have an equal right to justice. No matter what sentimentalists, wrongly informed, at home may think, there is no doubt that it is the best policy both for the Kaffir and the white man. The Kaffir is a child in civilisation, and should be treated as a child, kindly and justly, but firmly. No one would think of giving legislative or political powers to children, and no more should they be given to Kaffirs. There is, besides, the division of the races, which it is not advisable to remove. No fusion is wanted between white and black, and until it is wanted there can be no equality.

Let people at home put the question to themselves in its closest relations and see whether they would welcome a Kaffir into their families on terms of the most intimate equality, and they will probably discover a repugnance, and quite a natural repugnance as the answer. What is natural is likely to be right, and to South Africans, at any rate, the question does not admit of argument. Those who have to live in the country should be the best judges in a question of this sort, and the Imperial Government should respect South African opinion. If this had been done in the past, and if less attention had been paid to fanatical and unnatural sentiment, there might have been no Boer War.

The correct policy for the treatment of Kaffirs has already been found by the late Government of the Orange Free State. The Kaffir was there a gentleman of lesser degree, his rights respected, and his welfare looked after, but his position as an inferior carefully regulated. The result was satisfactory both to white and black. In the Transvaal, with his rich corn lands, the Kaffir should be made to contribute more to the revenue. He will in the future enjoy greater protection and better government, and he can afford to pay for these advantages. If he has to do some more work, so much the better, both for himself and the new colony. The hut-tax should be raised to 20s.; this tax should commend itself to moralists, because it is levied according to the number of wives a Kaffir has. If he has ten wives, that means ten huts, and consequently he would have to pay £10. This would be a mild



NATIVES PLANTING COFFEE ON LANDS OF THE THABINA FARMING ASSOCIATION

application of Mr. Rhodes' Glen Grey Act, and would, besides securing revenue, serve other useful purposes.

There is a notion prevalent in England that the Kaffir is poor. It is quite a mistake. The average Kaffir in the Transvaal leads a life of luxury and indolence compared to that of the English working-man. Even the Kaffir in the mines takes work very leisurely; a good English miner would do twice the amount of work in a day. Sir William Harcourt seems to be of opinion that simply because a native is a native he should not be taxed. This view of the native question only shows a want of knowledge of the facts. The native can as well afford to pay as Sir William's own income-tax payers at home. Many of the chiefs have hoards of gold in their huts, and all have great wealth in cattle, and to apply even death duties to them would be quite fair but very difficult. As for the tax, it is an insignificant affair; if it were £10 per hut many Kaffirs would not feel it much. Remember the Transvaal is a rich country. The Egyptian fellah with his land-tax of 25s. per acre per annum would think himself in Paradise if he could live in the Transvaal and farm, with only £1 per year to pay for each house he owned. The Kaffir of course pays no income-tax nor land-tax, and it is questionable whether £1 is sufficient. It is under rather than over the mark, and if revenue is short it should be raised to £2. He receives one great advantage among others for his £1 per year, in that there is no longer any danger of his being eaten up by a hostile *impi*.

CHAPTER XVI

INDUSTRY AND COMMERCE

INDUSTRIES.

A BEGINNING has been made with manufacturing industry in the Transvaal, but as yet factories are few and unimportant. The great engineering works on the Rand have been called into existence by the requirements of the mines, and might more properly be considered as part of the mining industry. They are extensive and well equipped ; some of the workshops can turn out heavy machinery well made and well fitted, and all can execute repairs, make castings, and fit in parts with efficiency and despatch. But so far the great cost of skilled labour, and other items of expenditure, have made it impossible to compete with home and American industry in machinery manufacture. When the superior iron ores of the country are worked a change in this respect will take place, and in the course of the next decade it is fairly certain that iron foundries on a large scale will be working. Branches of the firms at present supplying the Rand with mining machinery or others will be established at Johannesburg or Middelburg ; the first to come will no doubt secure the lion's share of the trade.

It is more than likely that a start would have been made in this direction already had it not been for the fact that the principal mining groups have large financial interests in one or more of the great firms making machinery for the Rand, and while the mines continue to be controlled wholly by the present people, they will naturally support their own factories ; but if new mines are opened and new capital is induced through liberal measures of Government, there will undoubtedly be excellent opportunities for establishing many

different branches of iron and steel manufacture, including machinery.

This is more fully dealt with in the chapter on iron and other minerals. In passing, it may be observed that independently of the larger and more important uses of iron and steel in connection with the mining industry in the Transvaal, there are many requirements of the country which could be supplied immediately from Transvaal iron ores, and which offer large profits to any one taking up their manufacture. For instance, there will be a demand for iron fencing standards, Kaffir pots, &c., &c.

The Rand Central Ore Reduction has for some time past been producing pig iron from Middelburg ores.

Industries other than mining and its associated works have in the past had little encouragement from the Government, from Capital, or from the people of the Transvaal. The most considerable industries in the country are nearly all due to the enterprise of one firm, Messrs. Lewis & Marks. Besides being distillers, and gold-miners, and farmers, this wealthy house engages in coal-mining, jam-making, candle-making, glass and bottle making, leather-making, brick-making, and pottery manufacture; and if in some matters their influence has not always been for the good of the State, they deserve praise for their encouragement of local industry.

Paradoxical as it may appear, the system of granting concessions for the exploitation of particular industries, ostensibly with the design of bringing them into life and nourishing them and protecting them, has almost invariably resulted in failure.

The concessionaires, in applying for their concessions, and the Government in granting them, appear to have been actuated only by the one motive of trying to make money by sale of the privileges to third parties. A few only of these concessions have been worked, and these are almost without exception for the manufacture of something for which the demand is so great and urgent that sufficient profits could be secured to induce capital and enterprise without any special protection. The principal industries worked under

concessions are the manufacture of dynamite, brandy, and cement. The dynamite monopoly is dealt with in Chapter X.

The brandy concession is worked at the Hatherley Distillery. This much may be said for Hatherley brandy, that it is better than the death-dealing mixture that has been so largely sold to the Kaffirs on the Rand during the past five years. The Hatherley stuff was supplanted in the market by raw spirits from Hamburg, naturalised as Portuguese at Lisbon on the way out, and imported into the Transvaal practically free under the Transvaal-Portuguese Treaty. It was doctored with tobacco, chilies, and other drugs in Johannesburg, and then sold to the Kaffirs by the illicit dealers. It is to be hoped that this evil-producing trade will be stopped once and for all ; it costs the country enormous sums for labour lost every year. As for the Hatherley distillery, if the company turns its attention solely to the production of sound whisky and other liquor for white consumption, there is no reason why it should not continue. For some time it has assisted agriculture by furnishing a special market for barley and other cereals, and if alcohol is required, by all means let it be made locally, if it be possible.

The chief ground of complaint in the past about the matter was not the actual manufacture so much as the policy of the late Government in protecting the Kaffir drink trade for the benefit of the concessionaires and the importers of Hamburg spirit. Hatherley whisky, although perhaps not so palatable as good Scotch, is sound enough, and if taken in strict moderation leaves no worse effects than other whiskies. If too much is taken it is another thing.

When questioned about the quality before the Concessions Commission, Mr. Samuel Marks replied, "It has had a large sale since the British came." This answer, which was clever under the circumstances, must not be taken as either a sure guarantee of the quality of the whisky or the thirstiness of the army. The large demand, it is to be feared, arose only because there was no other whisky obtainable.

The cement factory is one of the industries of the house of Eckstein. It is one instance among several of a capitalist group directly benefiting by the Government

policy, but little has been heard of the cement concession. As a fact, the manufacture was for a time carried on with little success, but since the present manager was appointed cement of good quality has been produced and sold at a fair profit under the high protective tariff which exists for the company's benefit.

There is a chemical company on the Rand, manufacturing sulphuric acid and other chemicals ; while this company has no concession, its products are protected by high tariffs, and since its reconstruction the company is now making fair profits from a comparatively large output.

Judging from the history of Transvaal protected industries, the best policy seems to be to grant moderate protection by special duties on articles which can be manufactured from raw material existing in the country. It seems difficult to establish new manufacturing industries without this, but there should be no concessions or exclusive rights given to any individual to manufacture any article whatever. That policy, instead of encouraging industry, rather tends to choke it. The concessionaire, in most cases, has no intention whatever of building a factory himself, and by refusing to part with his right except on exorbitant terms he prevents others from taking up the business, who might otherwise be willing to do so. There are many industries whose exploitation might prove remunerative in the Transvaal. Chief among these are the various branches of iron and steel manufacture and engineering, but there are also such trades as pottery manufacture, kaolin of good quality is plentiful, jam preserving, soap and candle making, leather tanning, boot and shoe making, &c., &c. By following the lead of Messrs. Lewis & Marks, who engage in all these manufactures, newcomers would not go far wrong ; for such industries are almost sure to be profitable.

Speaking at the Imperial Institute in March 1901, Mr. Chamberlain said : "There will be great numbers going to develop not only the mineral resources of this country which have already been opened up, but those still greater resources which we know to exist. In every kind of business occupation—manufacturing, industrial, mining—there must

of necessity be great development, and this country will be drawn upon for the majority, at all events, of those who will carry out that development." In view of the uneasiness about the future of British trade, surely a consideration of these new openings for British energy to which Mr. Chamberlain refers will bring some comfort. It is self-evident that when American coal is one half the price of British coal, provided the quality is nearly as good, then all the industries in which British coal secured to Great Britain a practical monopoly in the past will, sooner or later, be wrested from her. The Transvaal has the raw materials in as vast quantities, and probably of equal quality to the raw materials of America. Why not found a Pittsburg there, and make the beginning of the apparently inevitable change of situation of the great British iron industry? A Briton can be a Briton, and an Englishman an Englishman, as well at Middelburg, Transvaal, as at Birmingham, England. The grasping of the idea of the Empire as the unit is what is required. The piling together of people in great cities is being overdone, and the reaction must come. Let the English people spread themselves out and get elbow-room. Their heritage is vast enough.

If the old deep-level mines of industry in England give signs of pinching out, why not turn to the new but highly promising outcrop mines which, although further afield, are still within the boundary of the Empire's estate?

Early in 1901 this country seemed to be seriously contemplating the possibility of going to war with Russia about China, a country already thickly populated, and whose total export and import trade, with all her 400 millions and 5000 years, is only about twice as much as that of the infant Transvaal.²

The value of machinery on the mines of the Transvaal

¹ In a speech at Newport Pagnell, already quoted, Mr George Farrar said: "A country that produces £20,000,000 of gold per annum, and which has vast deposits of coal and iron, might one day be as prosperous as the United States of America."

² China's total foreign trade in 1899 was about £70,000,000, in which the British Empire participated to the extent of £43,000,000.—T. H. Whitehead, Royal Colonial Institute, 12th February 1900. The total Transvaal trade, export and import, is about £30,000,000.

at the end of 1898 was £9,409,059, at the end of 1897 it was £7,649,620, and the value of machinery used for other purposes than mines (such as flour mills, cement factories, and other industries) was in 1898 £239,489.

On the mines there were in 1898 1223 steam-engines, 1593 boilers, 370 dynamos, 570 electric motors, 702 hauling engines, 822 pumping engines, 295 ore crushers, 1965 rock-drills, 7149 stamps, and 16,510 trucks.

The total horse-power employed was 149,330.

On other works there were 468 boilers, and on railways 293.

The horse-power employed on works other than mines was 6120.

The number of engines so employed was 542.

The value of the machinery of the Transvaal will probably be doubled within six years after the War.

COMMERCE.

Since gold-mining became an established industry, the commerce of the country has grown to such an extent that the Transvaal market is now considered one of the most important among the new trade centres of the world, and there is ample justification for the view. Those who have already acted on it by establishing branches or agencies in Johannesburg have not had long to wait for handsome returns. They are now settled, with splendid stores and warehouses, in the best business parts of the city, and doing extensive and growing business, and ready to take advantage of their position in the Chicago of South Africa.

Transvaal commerce may be divided into three classes—

- 1st. The direct trade with the mines.
- 2nd. The general trade of the large towns.
- 3rd. Trade with the Boers, country population, and Kaffirs.

The direct trade with the mines has grown with the mining industry, and in the immediate future it may be expected to go on growing as the industry expands. Some fears have been raised recently by the statement that it is the

intention of the great mining houses to import all the stores they require direct. This has been denied by the capitalists, and they quote in support of the denial the figures of the trade they have been doing locally in the past. To take a common-sense view of the matter, it is not likely that the controllers of the mines will begin to import direct on any large scale for some time to come. They will be too busily engaged in getting their present mines in order, and in developing and equipping new ones, to go aside into by-paths. But there is no reason why they should not eventually feel disposed to do so. They have already acquired large interests in the machinery trade of the Rand, and it is quite possible that, in looking for other worlds to conquer, they may decide to attempt the annexation of Transvaal commerce as well as Transvaal industry. Such a thing has happened before, and is happening now in America and England, and it is more than likely to happen in the Transvaal. Let the merchants look to it ; there is only one way of hindering great amalgamations, and that is to see that the laws do not lend themselves to unduly unequal distribution of wealth.

Some of the points touched on in the chapters on the mining laws are of as much importance to the merchants, and, indeed, to the whole people of the Transvaal, as they are to those directly engaged in searching for new mines and new industries.

Only by identifying themselves with the general interest, by securing their position by enterprise and forethought, anticipation of requirements, and by reasonable prices, can the merchants hope to maintain their position for long.

The principal direct trade with the mines consists in supplying meat, grain, forage, candles, paraffin, cement, oilman's stores, timber, iron, steel in bars and sheets, galvanised roofing iron, tools, cyanide, chemicals, &c., &c. A few prices of some of these articles as follows are taken from the Minister of Mines' reports, the quotations being the averages for 1898 : Mealies, 18s. 5d. per muid (3 bushels) ; forage (oat-hay), per 100 bundles, 39s. 4d. ; candles, per box, 8s. 11d. ; paraffin, per case, 13s. 2d. ; cement, per barrel, 49s. 5d.

When the accusation of the intention of importing direct was imputed to the mines in 1898, Mr. Rouliot, of Messrs. Eckstein & Co., replied to it in his speech at the annual meeting of the Chamber of Mines on January 12, 1899, by stating that—

“It is one of those wild assertions made without any regard to the facts. We have asked companies to furnish us with returns of the goods imported direct by them during the past year, returns of goods imported through the agency of a local merchant, when payment and commission are settled here, and returns of goods purchased and paid for locally.”

Fifty-six companies only replied, and it appeared that during 1898 they had imported direct goods of a value of £369,000, the two chief items being machinery and cyanide. In explanation of this rather large amount, Mr. Rouliot gave the explanation that—

“Heavy machinery has to be ordered and constructed under the supervision of engineers residing in Europe,” which was quite a true and reasonable explanation. Direct importation of cyanide had been undertaken by the companies in order to get beyond a local ring which had raised the price 100 per cent.

“With the exception of these two items, and a few shipments of heavy timber bought direct from America, the value of goods imported direct by companies is insignificant.

“The next class of returns deals with goods imported through the agency of local merchants, and paid for here. These are articles which are not usually kept in stock to any large extent, and include such goods as cyanide, candles, zinc discs, and also certain machinery. The orders are given to local merchants, who execute them where they deem most beneficial to themselves, and who receive payment here. The amount thus imported last year by the fifty-six companies is £324,483.

“Next we come to the stores purchased locally from the merchants of the place and paid for every month; the value of this reaches the enormous total of £2,487,660. In addition, the fifty-six companies have paid here £767,600 for their explosives, and have distributed in wages £3,329,000 to their white and black employees.

“As there are 120 companies producing or developing gold and coal-mines around Johannesburg, if we estimate that the sixty odd companies for which I have no returns, and which include such large undertakings as the Langlaagte and Randfontein groups, have not spent locally more than one-half what the other fifty-six have spent, I find that the companies working around Johannesburg

have paid here, and put annually in circulation in the place, a sum of no less than from eight and three-quarter millions to nine millions, without reckoning the payment for dynamite, which is more than another million, and not including the goods imported through local merchants, which to a great extent might be considered a local trade. These figures show you what amount of truth there is in the statement to which I have referred. We all recognise the moral claim of the merchants to the support of the mining industry; they have helped to build the place, they have grown with it, and deserve our consideration; but I must say that, while recognising our duty towards the commercial section of the community, we do not admit of any claim on our sympathy on the part of those who have come here, attracted by the success of the mining industry, to live on it like parasites, to prey on us, or whose main line of trade is to poison our natives, and who are chiefly responsible for this cry."

This statement of Mr. Rouliot is reassuring. The figures he gives agree roughly with the returns of the State Mining Engineer. The State report for 1898 shows that the mines of the Rand paid in 1898—

Wages	£6,397,574
Dynamite	1,266,243
Mining material—oils, cement, &c., &c.	3,825,935
	£11,489,752

An amount is spent locally in Johannesburg which is not far short of half the annual expenditure on the British Navy. The very magnitude of the trade may be the local merchant's chief danger.

It is evident that the commerce of the Transvaal will for many years to come depend chiefly on the mines, and whatever hurts and depresses the mining industry will hurt and depress commerce. The correct policy seems to be for the merchants to co-operate with the other sections of the people in securing such measures of Government as will further the extension and prosperity of mining, while not unduly encouraging the growth of overpowerful financial combinations.

The second great class of Transvaal trade is the general trade of the large towns, the trade represented by the purchasing power of the wage-earning and professional

classes. The great source of this purchasing power lies also in the mines, which it has been shown pay out in wages alone an amount of six and one-third millions yearly. Even the wages paid by the Netherlands Railway, by the Government, by the Dynamite Company all came indirectly from the mines.

Of course, in addition to the wages paid in the mines, there are considerable sums of money continually coming to the Rand for investment, and there are the dividends paid out on shares held locally. These two sources swell the purchasing power of the Transvaal people by probably more than a million annually, and will doubtless continue to do so.

In consequence of these never-failing streams of money, the general trade of Johannesburg, Pretoria, and other large towns is extensive, lucrative, and flourishing. The principal streets of Johannesburg have magnificent drapery establishments, filled in time of peace with choice goods from England, France, Germany, and America. There are great grocery stores crammed full with all kind of food stuffs, brought from all parts of the world, flour from Canada and America, fruit and butter from Australia, coffee from Rio and Java, wines from France and the Rhine, whisky from Scotland, and beer from England and Germany. There is, as a rule, nothing lacking, and most is imported. The land itself produces only a small part of what is required. Then there are hardware and furniture shops to furnish the houses of the inhabitants. The houses, since the last five years, have been well built of burnt bricks, some of the more pretentious being of stone.

The general condition on the Rand gives evidence of abundance of money in circulation ; in fact, if it were not so the people could not live, for if there is profusion of things to buy, the prices required for them are exceedingly high. English beer is 3s. 6d. per bottle, condensed milk is 8d. and 9d. per tin, eggs are 2s. to 2s. 6d. per dozen, butter is 2s. to 2s. 6d. per lb., and so on.

The causes of these high prices are the exorbitant railway rates paid for transport from the coast and the heavy customs tariff.

About these some suggestions will be made later. The trade of the mining towns is undoubtedly the trade that offers the best and most stable investment to merchants. The direct trade with the mines may one day go, but it is not likely that the general trade can ever be taken from them. The Compound bogey is quite an easy matter to settle legislatively. The English Truck Act settled the question long ago in England. The only thing that cannot well be prevented is side-by-side competition with the local merchants, on the part of great capitalists. This may come about eventually, but the day is evidently still distant.

The third class of trade in the Transvaal is the trade with the Boers, the country population, and the Kaffirs. At one time this was the only trade in the country, and business was carried on by the storekeepers under conditions of considerable difficulty, but, as a rule, with great profit. The medium of exchange then consisted principally of hides and wool; gold was but rarely seen and long credit was necessary. Now these conditions are quite changed; the most distant native *stad*¹ has its supply of gold coin, and the storekeeper can readily sell his goods for cash. The goods may not bear so much profit as formerly, but the trade is sounder and more extensive. The Boers buy regular standard classes of goods. In the matter of food and dress they have ideas of their own, and the trade requires to be catered for. The Boer's beverage is coffee, his chief foods are meat and bread, he is fond of jam, sweetmeats, and sardines. His clothes are sober-coloured ready-made tweed suits, and perhaps Bedford cord or moleskin trousers; his hat is wide brimmed and strong, and his boots as near an imitation of the veldschoen as possible. The Boer lady wears black *cappies*, black cashmere dresses, prints of a strong make, generally with a flowered pattern on a blue ground, known as German print, and strong boots. Of course in the towns and villages greater variety is required, and articles of finer make and style; but the wardrobe of the up-country Boer people is, as a rule, made up as above described.

A few of the men of the Kaffir tribes in the Transvaal

¹ *Stad*=Kaffir village.

dress in the same fashion as the Boers, their clothes being, as a rule, slightly inferior in quality, and some of the Kaffir women copy the Boer ladies in the same way; but the majority of them retain the costume of their ancestors, which is as nearly as possible no costume at all except a blanket, and consequently there is a large trade done in the fancy coloured rugs which delight the eyes of the Kaffir belles. Fashion in the patterns of these rugs changes from year to year, just as decidedly as fashion changes in the Parisian confections of the London modiste, and a trader who has not the correct rug is handicapped for the season. Kaffirs buy beads, handkerchiefs, shirts, boots, Kaffir pots, earthenware bowls, tin billies, &c. As great numbers go down every year to work in the mines, and return each with £20 or £30 in gold, they and their ladies can afford to purchase luxuries unheard of ten or twenty years ago. This up-country trade of the Transvaal is mostly in the hands of the old established firms, having numerous up-country branches, who were in the country before the war of independence in 1881; many of these are now extremely wealthy. They have the business connections and are likely to retain the trade; the new-comers in commerce have studied rather to supply the new population.

The volume of Transvaal commerce is shown in the following return of goods imported *via* the different ports of entry :—

	1896.	1897.	1898.
	£	£	£
Delagoa Bay	2,125,553	3,469,550	1,770,974
Natal	2,991,063	3,610,649	2,984,569
Cape Colony	8,017,229	5,611,916	4,330,652
Orange Free State	944,325	871,738	910,289
	14,078,170	13,563,853	9,996,484

The following returns show approximately the exports from Great Britain, America, and Germany to the Transvaal. The figures agree roughly with those given above, except those of 1898. These returns were kindly supplied by the

British and South African Export Gazette, and on sending them the editor remarked :—

“ The German returns give the country of entry, but unfortunately the British and American do not, although the Colonial returns give the value of the British and American goods removed for consumption in the Transvaal. This is the best that can be done from official returns.”

	1896.	1897.	1898.
German exports to the Transvaal .	£ 297,969	£ 339,748	£ 457,150
British exports to Portuguese East Africa (Delagoa Bay, &c.) }	977,073	1,264,766	1,164,103
United States exports to Portu- guese Africa (East and West Coast) . }	388,592	373,694	422,600
Approximate value of British and United States exports to the Transvaal <i>via</i> the Cape Colony and Natal . . . }	12,174,496	11,335,619	8,339,042
Approximate value of exports to Transvaal from all other countries . . . }	250,000	250,000	250,000
Total Transvaal Imports .	14,088,130	13,563,827	10,632,895

The exports in 1898 in raw gold alone were £16,044,135. In 1899 the rate of production for the nine months worked was equal to a total for the year of about £20,000,000.

The import trade of the United Kingdom for 1898–99 was £487,745,163 ; for 1899–90, £512,675,794 ; the exports of goods made or produced in England were for 1898–99, £258,848,833 ; for 1899–1900, £289,904,012.¹ These figures mean that, as regards import trade, the Transvaal returns stand, in an average year, in proportion to the returns of the import trade of Great Britain and Ireland, about as 1 to 39, and as regards export trade of home products about as 1 to 13 ; that is to say, that the United Kingdom imports thirty-nine times as much in a year as the Transvaal, while it only exports of its own products thirteen times as much as the Transvaal does of its own products. In other words, as an exporter of home goods, the United Kingdom is only equal to thirteen Trans-

¹ *Hasell's Annual*, 1901.

vaals, while the ratio of population is as 160 to 1. Thus in the Transvaal, reckoning only on the results of the past, which in the future are certain to be largely extended, there has been added to the Empire a country equal in export production value to one-thirteenth of the United Kingdom. The time may come when the Transvaal production for export may be equal to as much as a quarter of that of the United Kingdom, and then Great Britain in that respect will be equal to only four Transvaals.

Writing a few months before the outbreak of war, a correspondent of *The Times* thus contrasts South Africa with the greatest British Colonies—Australia and Canada. He says: "The principal source of anxiety in the industrial situation in South Africa has of late years been a heavily preponderating balance of imports over exports. For the two years of 1896 and 1897 the excess of imports over exports was very great; but in 1898 the balance restored itself in favour of the export trade, and the figures of trade were £26,709,000 worth of exports and £24,500,000 of imports, giving a combined total of £51,209,000. The entire population of South Africa does not yet reach 1,000,000 persons, and when this total of foreign trade is compared with the £61,000,000 done by the 5,000,000 inhabitants of Canada, and with £74,000,000 of external trade done by 4,500,000 inhabitants of Australasia, it is evident that some special circumstance must govern South African trade with the outside world. The special circumstance is, of course, to be looked for in the very large output of gold and diamonds, and the fact that South Africa has to import almost everything required by the white population. South Africa has practically no manufactures, and does not feed itself."¹

¹ The trade returns of the Cape Colony and Natal for 1900 were approximately:—Imports, 25½ millions; exports, 9½ millions. Compared with 1899 there was an increase in imports, chiefly foodstuffs, of about 2 millions. The principal item in the shortfall of exports was, of course, native gold from the Transvaal, which accounted for some 14 millions sterling. The total shortfall in exports was 17 millions. Wool, one of the most important South African products, had dropped from £2,792,000 to £899,000. In diamonds there was a decline of £701,000, in consequence of the De Beers Consolidated Mines not being able to resume work till after the Relief of Kimberley in February, and their operations having since been hindered by the difficulty of obtaining coal supplies.—In 1901 the trade of the Colony showed an increase in imports of £4,000,000, and in exports £3,000,000, as compared with 1900, while Natal imports amounted to over £9,000,000.

Germany and the United States have fully grasped the importance of the Transvaal in a commercial sense, and have made all the moves necessary to secure a great share of its trade. Great Britain, after the severe struggle now about to end, should endeavour to reap to the full her proportion of the advantages to come. Some of the goods required for the Transvaal must necessarily come from America on account of the special opportunities for their manufacture in that country, and the same is true as regards Germany, but the trade of both these countries is greatly extended through the energy and resource of the American and German manufacturers and agents. They know everything about advertising and pushing their goods; they keep their names prominently to the front by means of trade journals and circulars, and they send competent men to the country itself to push their wares. An American who comes out to sell mining machinery or material can give the latest information about all new improvements and new experiments; he can tell which is the best form and weight of rope to recommend for any given depth and weight of lift; he can quote where this crusher has been tried successfully, and where that other has failed, and which is the best oil and packing, and which the best type of boiler or pump for any special purpose or work. The German in his line is similar in being a master of detail and practical knowledge. On the Rand a great volume of trade is diverted to these two countries which would otherwise go to Britain on account of the men who run the Rand being largely made up of Americans and Germans. Many of the mine engineers and managers are Americans, and a great number of the chemists are Germans. Both have profited by their training in mining in their own countries, the American in practical experience, and the German in the Freiburg School of Mines. It is quite easy to see that an American engineer accustomed to a certain type of machine, built, say, in Chicago, the capabilities and work of which he knows, and is certain to be satisfied with, will order the same for the mine on the Rand as he did for his previous mine in America. If English manufacturers sent their younger sons to learn

mining engineering at the best schools which teach the science and then sent them out to the Rand, in a few years they would learn the requirements and begin to influence trade, that is, of course, if their fathers' firms kept to the front as manufacturers. Another cause for American success is to be found in despatch in execution of orders. English firms, especially for some years past, have appeared to give little consideration to new orders; they appear to be so busy that they are indifferent about getting more trade. Orders for tubes, rails, locomotives, and pumps are continually going to America for this reason alone.

The chief drawbacks to Transvaal commerce in the past have been the same which hindered the mines—heavy railway rates, heavy customs tariffs, heavy licences, transit dues through the Customs Union countries, &c. The Free State-Cape Colony and Natal Railway systems have fattened on Transvaal trade like a pair of strange calves sucking a cow in full milk, and that although the generous-natured beast had in the Netherlands Railway an overgrown, ungrateful, and ungracious offspring of its own to support. Then there is the heavy charge of 3 per cent. in transit dues which the Customs Union Colonies levied like so much ransom money after the manner of brigands; and to crown all, there were the customs duties of the Transvaal itself. These were far higher than would have been required for revenue purposes if the State had been well ordered. The new Government will be in a position to change all these things. In respect to railway rates and transit dues, it can, if need be, solve the problem by duplicating the Delagoa Bay line.

The necessity of so drastic a measure is not likely to arise, because if the two Southern Colonies are reasonable there will be no inclination to treat them unfairly, rather may they expect special consideration as British Colonies.

As regards import dues, undoubtedly the best solution for all parties, if it were possible, would be a general customs union and the abolition of all transit dues. The present terms granted to inland colonies which join the Customs Union are that they receive 85 per cent. of the receipts from customs duties on goods entering their country, the 15 per

cent. being retained by the seaboard colony to cover the cost of collection. The cost of collecting the import duties in the Transvaal in 1898 was only £43,220.¹ Fifteen per cent. on Transvaal customs, as levied before the War, would come to £150,000, so the Transvaal would not gain much by entering on those terms. The general tariff in the Transvaal is $7\frac{1}{2}$ per cent. on the total made up by taking the original over-sea invoice and adding 20 per cent. The actual tariff is thus 9 per cent., which with 3 per cent. transit dues to the Customs Union countries, makes a total of 12 per cent.

The ordinary duty in the Customs Union is $7\frac{1}{2}$ per cent., but there are heavy special duties, the policy of protection being something similar to that of the Transvaal. Jams and preserves in the Transvaal are charged 40s. per 100 lbs., and in the Customs Union 18s. 9d. Rugs are liable to 20 per cent. in the Customs Union, and to the ordinary tariff in the Transvaal and so on.

The policy suited to the Transvaal is undoubtedly one of reduced tariffs, especially on food stuffs and on articles of necessary use in life. This is one of the chief possible ways of reducing working costs on the mines. Sir David Barbour has distinctly advocated such principles in his report to the British Government upon the resources of the new colonies. As long as the cost of living is kept high, the poorer mines cannot be worked. The taxation must be shifted from effort and placed on result.

A reduction of 50 per cent. should be decided on immediately, while an endeavour should be made to come to terms with the Customs Union. If the Cape Colony refuses to come to a satisfactory agreement, it cannot be helped.

The Cape Colony, as the predominant partner hitherto, would probably find it difficult to sacrifice its cherished plans of protecting its farming and wine-growing interests, but it would have to decide whether that sacrifice would not be worth its while, seeing that only in this way could it retain its great hold on the Transvaal carrying trade. The anomaly

¹ Not including the Netherlands Railway charges for collecting customs at Komati Poort.

of brandy in the Colony going free of taxation, while the revenue it should produce is obtained by means of the imposts on the food supplies of the Transvaal, cannot be continued.

At any rate, the Transvaal should see that, in case the Cape Colony refuses to tax brandy, that it will not be able to make up the required revenue from the Transvaal. Already Natal, the latest colony to join the Union, is showing signs of dissatisfaction with the tariff, and, when the present term is up, it will either have to be made to suit her wishes, or she will almost certainly retire from the partnership. The Transvaal, in coming in, would give stability and power to the whole combination, and every one would benefit in the long run by the adoption of the policy best suited to the development of the Transvaal mines. That policy lies in the reduction of tariffs, reduction of railway rates, reduction of licences, and reduction of every charge which goes to make up the initial cost of mining, and taking the revenue instead from the results obtained.

Besides the assured great future of Transvaal mining, reckoning only on the present mines, and its attendant great prosperity gained for Transvaal commerce, there is the greater future to be assured by bringing low-grade ores into the sphere of practical exploitation. If this were done, it would double or treble the future of both. It has been shown that a moderate estimate of the gold value of the Rand, as already known and for the most part proved, amounts to over two thousand one hundred millions sterling, and that fourteen hundred millions of this gold, more or less, will have to be expended to secure its extraction. By looking in the direction to which these facts point, the vast possibilities of Transvaal trade can be seen extending into lines of millions and millions of pounds sterling in gold on one side, and millions and millions of tons of goods on the other. And when the gold is finished, there is still a vista of prosperity in the permanent trade and industry of the country, which by that time will have been established in its agriculture, its plantations, its ironworks, and its coal-mines, and its hundred resources other than gold.

CHAPTER XVII

THE RAILWAYS

THE NETHERLANDS RAILWAY, NOW THE IMPERIAL MILITARY RAILWAY.

Financial.

IF the Netherlands Railway were dealt with as an asset, confiscated and taken over by the new Colony, this inquiry would be limited to an account of the value of the property and its earning power for the new Colony, but other considerations may be necessary. It is true that the Imperial Government took over the railway after legitimate reasons for its confiscation appeared to have been brought out before the Concessions Commission in October 1900, when it was clearly shown that the Company had not been neutral during the War, but had entered the field as an active combatant, in that it had manufactured ammunition and partly paid destruction commandos engaged in blowing up bridges and wrecking railways on British territory. It is also true that the capital of the Company is principally in the form of debentures guaranteed by the late Government, a guarantee which the Imperial Government might in any case repudiate, more especially in connection with a concern such as the Netherlands Railway. Still the Imperial Government may decide to pay out the debenture-holders and shareholders,¹ or at least those of them who may be able to show that they had nothing to do with the warlike policy of the Company. Such liberal arrangements by the Imperial Government, it will be seen, could only be on the basis of repayment at or under par, because in view of the heavy claim it has against the Company the new Government would surely not be bound by the terms of the concession regarding expropriation. The capital of the Com-

¹ The Concessions Commission advised that only the bondholders should be paid, but a decision on the whole matter has not yet been arrived at.

pany is shown in the balance-sheet for 1899 to amount to £1,166,666, 13s. 4d., in 14,000 shares of 1000 florins each. Of this amount the late Government held, in 1899, 5713 shares; and it was reported recently that 1000 of these had been disposed of by the late Government, chiefly in Holland; also that of the balance of the shares 6836 were held in Germany and Austria, the value being reckoned at 130 per cent. above par. Of the remainder of the shares, it may be estimated that a large proportion will be found to be held by parties who were responsible for the policy of direct participation in the War.

Proceeding on the assumption that the Imperial Government will partly discharge the liabilities of the late Government, in respect of the railway, to those shareholders and debenture-holders who had no means of preventing the Company from departing from the correct policy of neutrality, the following statement may be made up:—

14,000 shares of 1000 florins each at par	£1,166,666 13 4
Less 5713 shares held by late Government at par (assuming that transfers passed after the outbreak of war will not be recognised)	476,333 0 0
Par value of shares held by public in Europe or elsewhere	£690,333 0 0
Deduct, say, £100,000, for shares which may be found to be held by parties responsible for the warlike acts of the Company	100,000 0 0
Say nett shares at par	£590,333 0 0

The debentures guaranteed by the late Government, according to the balance-sheet¹ of 1899, are as follows:—

£ 454,000 0 0 at 4 per cent.	
1,208,583 6 8 „ „	
663,250 0 0 „ „	
1,250,000 0 0 „ „	
1,083,333 6 8 „ „	
£4,659,166 13 4 „ „	£4,659,166 13 4

¹ Published in the *Financial News*, October 17, 1900.

Brought forward . . .	£4,659,166	13	4
£350,000 at 5 per cent.	350,000	0	0
£2,200,000 at 4 per cent., ¹ raised in Holland in 1899 to repay the £2,000,000 advanced to the Company by the late Government, the proceeds of the Rothschild loan. (The 1898 balance-sheet shows the amount as a loan from the Government at 5.8 per cent.)	2,200,000	0	0
	£7,209,166	13	4
Less held by the late Government	893,400	0	0
Total debentures held by the public in Europe and elsewhere	£6,315,766	13	4
Deduct, say, £500,000 for debentures which may be found to be held by parties responsible for the warlike acts of the Company	£500,000	0	0
Nett debentures at par	£5,815,766	13	4

The assets of the Company which remain in the country would appear from the balance-sheet to be as follows :—

Railways	£6,254,406	17	0
Tramways and coal mines at Springs and Geduld	756,660	1	9
Balance of interest paid during construction ²	127,876	6	1
Difference between nominal amount and issue price of loans ²	314,047	7	5
Klerksdorp railway	697,384	17	10
Inventory property	187,109	6	11
Locomotives	552,681	3	5
Rolling stock	1,025,088	16	6
Goods at sea (landed at East London)	41,403	15	10
Goods at stores	308,882	13	9
Works in construction	13,896	14	7
	£10,279,438	1	1

Besides these assets, there were amounts of cash and amounts due to the Company, some of which may be recoverable or may have already been received.

On the showing of the balance-sheet the assets of the

¹ The repayment of this loan is rather unfortunate, as meantime the money is gone, and the new Government will have both the debenture-holders in Holland to pay and the Rothschild stock as well.

² These two items are considered to be part of the cost of the railway.

Company are considerably above the liabilities, but it must be remembered that extravagant prices were paid for the construction of the railway. According to Mr. Fitzpatrick,¹ in some cases as much as £23,000 per mile was paid for work which could have been done at about £8000. It also appears from the balance-sheet that amounts expended for widening railways, for locomotives, for rolling-stock and goods were paid out of the reserve fund ; or, in other words, from past profits, which it might be found should, in terms of the Concession, partly belong to the Government. These payments amounted to £1,897,552, 1s. 8d., and the Government's share is shown in the following statement :—

RESERVE FUND.

From railway profits	£1,254,240	13	2
From Netherlands Railway Company	643,311	8	6
All expended on extension works and rolling-stock			
	<u>£1,897,552</u>	<u>1</u>	<u>8</u>
Government's share of profits carried to reserve as above, on basis of profit division, viz. 85 per cent.	£1,066,104	13	2
The Netherlands Com- pany on basis of profit division, viz. 15 per cent.	£188,136	0	0
Advanced to reserve fund	643,311	8	6
		<u>831,447</u>	<u>8 6</u>
		<u>£1,897,552</u>	<u>1 8</u>

Further, there was an amount of £548,000 due to the late Government on account of money lent for the building of Klerksdorp line.

Then a question arises which lawyers will, no doubt, be called upon to decide. It is, who is to pay for the damages done by the Netherlands Company's management and employees to the Natal, Cape Colony, and Free State railways—bridges, permanent way, and rolling stock ? It seems that the cost of making good these damages might quite fairly be

¹ "Transvaal from Within."

charged against the Netherlands Company. There are also the damages done to the Netherlands Company's own line and rolling-stock by the Netherlands' employees. It appears reasonable that in the case of these damages also the cost of making them good should be charged against the Company. The total bill for all these will probably not fall far short of £2,000,000.

Summing up all these amounts, some of which are certainly, due by the Company, and others more or less probable, as follows :—

Cash lent by the late Government for Klerks- dorp line	£548,000
Damages done to railways by Netherlands Company's management and employees, say	2,000,000
The late Government's share of past profits applied to construction and purchase of rolling stock (reserve fund)	1,066,104
The late Government's debentures	893,400
The late Government's shares, 5713 at par	476,333
	£4,983,837

Deducting this total amount from the assets taken over as shown above :—

Assets taken over	£10,279,438
Less possible debits	4,983,837
Nett assets to be paid for	£5,295,601

or considerably less than would be required to partly repay the debenture-holders.

The Netherlands Company has of course a contra account against the late Transvaal Government for railway work done during the War, and it will doubtless also charge for the manufacture of shells and ammunition, and possibly for the work done by the destruction commandos in blowing up bridges. But it does not seem reasonable that the new Government should hold itself liable to pay for these services.

The Company also had available or on hand on December 31, 1899 :—

Bonds of the 4 per cent.	£9,416	13	4
Stock account securities	165,789	16	0
Deposits and short bills account	425,856	1	4
Deposited securities	24,000	0	0
Cash in Holland and South Africa	12,523	0	2
Labouchere Oyens & Co., Amsterdam	16,903	7	8
National Bank, Pretoria	123,500	15	8
„ „ London	1,159	10	5

£779,149 4 7

And the following doubtful account :—

The South African Republic (Messrs. Kruger and others), Dr. for—	
Fares, carriage, delivery, &c.	£305,936 15 11

If the amounts estimated for damage done to railways in South Africa prove to be excessive, or any of the above-mentioned debits are found to be unreasonable ; or if the new Government recognises any claim for payment of goodwill on taking over the railway and its business ; and if on these accounts a balance is found available for payment to the shareholders after the debentures are paid ; then it must be remembered that if such balance exceeds the amount required to pay out the legitimate shareholders at par the new Government would be joint-owners in any surplus to the extent of about $\frac{57}{146}$ as holders of 5713 of the shares.

Working of the Railway.

Coming to the working of the railway, the report for 1898 shows that there were 1147 kilometres of railway line open and working. The main line is that from Delagoa Bay to Pretoria and Johannesburg. The following were the receipts and expenses for 1896-97-98¹ :—

¹ For the year 1899 the receipts and expenses were as follows :—

Railway receipts	£2,580,098	15	5
Other receipts	96,804	17	9
	<u>£2,676,903</u>	<u>13</u>	<u>2</u>
Working costs	£1,297,653	1	3
Interest and dividends	358,995	16	8
To Reserve Fund	253,534	1	0
*To management and staff (5 per cent. bonus)	38,336	0	9
*To the Government	651,712	12	1
Balance to shareholders	76,672	1	5
	<u>£2,676,903</u>	<u>13</u>	<u>2</u>

* Article 34 of the Concession.

	1896.	1897.	1898.
	£ s. d.	£ s. d.	£ s. d.
Receipts	2,903,516 0 5	3,008,091 16 8	2,617,612 5 2
Working costs and } interest on capital }	1,197,841 18 8	1,518,044 7 9	1,346,947 14 5
Profits	1,705,674 1 9	1,490,047 8 11	1,270,664 8 9

The average receipts over the
three years were . . .

The average costs . . .

The average profits . . .

The percentages of expenditure to total receipts were
for—

1896.	1897.	1898.
41.25%	50.46%	51.46%

The rates charged on the railway were too high all round, and on some articles even extortionate. The rates on carriage of coal and articles of absolute necessity to the mines were more than double those charged in Cape Colony. The following statement was submitted to the Concession Commission by the legal adviser of the Johannesburg Chamber of Commerce:—

“The following are the correct comparative rates in October 1899:—

<i>Via</i>	Normal.	Inter- mediate.	Rough Goods.
	Per Ton per Mile.	Per Ton per Mile.	Per Ton per Mile.
Cape	2.34d.	1.7d.	1.6d.
Orange Free State	2.34d.	1.7d.	1.6d.
Natal	3.24d.	2.28d.	2.21d.
Netherlands—			
Cape and Orange Free State	7.3d.	6.15d.	3.8d.
Natal	4.74d.	3.8d.	2.8d.

“The coal rate on the Cape and Natal railways is $\frac{1}{2}$ d. per ton per mile. On the Netherlands Railway the coal rate varies according to distance, and is on the zone system, which works out for a long distance, say Middelburg to Middle Vaal River, 173 miles, at .83d. per ton per mile, but on the line from Springs to Johannesburg, which would represent the bulk of the coal traffic, the rate is 2.03d.

per mile. The average local rates for normal goods on the various systems for 150 miles is as follows :—

Netherlands Railway . .	6d. per ton per mile.
Cape „ . .	4.3d. „
Natal „ . .	4d. „

Mr. Rouliot, in his speech to the Chamber of Mines in January, 1899, stated :—

“The average distance to which coal is carried for the mines is $25\frac{1}{2}$ miles. For this distance the Netherlands Company charge 4s. 5d. or 2.08d. per ton per mile, whereas the tariff for the same distance in the Free State and Cape Colony is 1s. 3d. or .59d. per ton per mile, and in Natal, 2s. equal to .94d. per ton per mile. It is true that the Netherlands Railways return as their costs per train mile for all descriptions of traffic a much higher figure than the neighbouring states ; they reckon it as at 7s. 8d., whereas the Orange Free State reckon 4s., the Cape 4s. 4d., and Natal 4s. 10d. I do not understand why these costs are given at so high a figure here, but, assuming that it is right, they ought not at any rate to charge more than double what is charged in the Free State and the Cape, which would mean 3s. 6d. for $25\frac{1}{2}$ miles, instead of 4s. 5d. as at present.”

The average rate for coal, being 2.05d. per ton per mile over the principal coal line, Springs to Randfontein, should be reduced by one-half by the new Government. In fact, an all-round reduction of one-third or more on the former tariff both for passenger fares and for goods rates might well be made by the new administration. Passenger fares might even be reduced by one-half.

These reductions should be made discriminatingly. Rates, such as those on coal and other articles, which are found to be seriously hindering commerce or industry or agriculture should be reduced by one-half or more, while rates on other articles, a reduction of which would not advance the general interest of the country and only be a needless loss of revenue to the railway, should be maintained. The matter is one to be dealt with by experts on the management of railways.

Nor would the railway be likely to lose in the long run by such a policy of wholesale reduction. The volume of trade would increase enormously. A large trade could be opened up for the carriage of coal and base metals to the seaports. Despite its lavish rate of expenditure for working

costs, even the Netherlands Company would, if it had adopted such a progressive policy, have greatly increased its profits. But there is no doubt that the new administration, which is expected to take over the railways by July 1, 1902, simultaneously with lowering the rates, would bring down working costs, so that a reduction of 33 per cent. on the tariff would not be likely to greatly affect the balance of profits. Further, the charges on account of capital would have been greatly reduced.

Assuming then, first, that the Imperial Government decides to pay, say, £5,500,000 to the old debenture and shareholders, and £2,000,000 to Rothschilds, and that it raises money to pay the total amount of £7,500,000 at 4 per cent., the annual charge for interest would amount to £300,000.

Assuming, secondly, that after a reduction of 33 per cent. on the rates, the average profit will not fall more than 25 per cent. below the last three years' average, the following would result :—

Average yearly profits . . .	£1,488,795	6	6
Less 25 per cent. . . .	372,198	16	7
	£1,116,596	9	11
Deducting annual interest on			
£7,500,000, at 4 per cent. .	300,000	0	0
Nett Government revenue . . .	£816,596	9	11
Or say, £800,000, as against £700,000 to £800,000, accruing to the Government under the old administration.			

The management which would be the best for the Transvaal Government railways would be one similar to those of the Cape Colony and Natal. The general manager should have had experience in working colonial lines, which require different treatment in many respects to that applicable to the great home railways.

In Natal in 1897 the railways brought a nett profit to the Government of £204,731, after paying interest at 4 per cent. on capital.

In the same year, and be it remarked that 1897 is a fairly representative year, the total earnings of the Cape Colonial railways were £3,070,897. The expenses were

£1,898,316, showing a nett profit of £1,725,810. The percentage of expenses to total revenue was 61.8. The capital invested was £18,935,559, the nett profits being at the rate of £6, 2s. 6d. per cent.

In the Orange Free State the railways were taken over from the Cape Colony on the 1st January 1897. The price paid for the railways and equipment was £2,590,796. After paying £70,000 interest on capital the nett profits came to nearly £500,000 for the year, equal to about 20 per cent. on the capital. Expenses were 40.5 of the gross revenue.

These figures, showing the profits of the railways of the neighbouring colonies, tend to prove that the estimated nett revenue of £800,000, after reducing rates by one-third, for Transvaal railways, is a moderate one, and it is highly probable that within a year or two it will increase to one or one and a half millions.

Mr. A. Cooper-Key¹ compares the actual profit of the Netherlands Company in the years 1896, 1897, 1898, with a reasonable profit, reckoned at $4\frac{1}{4}$ per cent., as earned by the Cape Government railways on the capital, shares and debentures, and brings out the excess profits as follows:—

1896	£1,162,925
1897	1,111,964
1898	928,623

an average of over a million in each of these three years over the fair trading profit of the Cape system. He continues: "It is axiomatic that new territories should be possessed of the best and cheapest railway facilities."

Therein he is undoubtedly correct, and the above proposed reduction of $33\frac{1}{8}$ per cent., with its estimated surplus profit of £816,596 for one year, should be considered as only a temporary arrangement, partly for the sake of revenue purposes. To begin with very drastic reductions, bringing down the profits to, say, a 4 per cent. basis, would seriously dislocate the whole traffic arrangements of the Cape Colony and Natal railways, because goods could then be brought

¹ "Why Kruger Made War," J. A. Buttery, p. 260.

via Delagoa Bay at about one-half the cost at which they could be over these systems. This at present is not desirable.

PRETORIA-PIETERSBURG RAILWAY.

This railway is next in importance to the Netherlands. Reports of directors and statements of accounts for the years ended 31st December 1898 and 1899 show:—

Share capital, 50,000 £10 shares = £500,000, of which £300,000 belonged to the Transvaal Government, and have been taken possession of by the English Government.

Debenture capital issued to 31st December 1899, £1,005,400. 4 per cent. on share and debenture capital guaranteed by the Transvaal Government.

Total length of line, 177 miles.

First section, to Nylstroom, 81½ miles, opened on 1st July 1898.

Second section, to Pietpotgietersrust, 137½ miles, opened on 1st October 1898.

Third section, to Pietersburg, 177 miles, opened on 31st May 1899.

The traffic for the four and a half months ending 13th October 1899, during which the whole length of the line was open, and through traffic with the ports was established, was as follows:—

Number of passengers carried	45,611
Tons of goods, &c., hauled	7,402
Receipts from passenger traffic (including excess baggage and parcels) . . .	£25,858 16 11
Receipts from goods, &c. . . .	8,695 10 2
Miscellaneous receipts	665 9 7
Total receipts	£35,219 16 8
Total expenses (excluding 10 per cent. Reserve Fund charge) . . .	22,227 18 11
Profit (= 36.8 of receipts) . . .	£12,991 17 9
Percentage of working expenses to receipts, 63.2.	

This result was obtained in spite of the commercial stagnation resulting from the political crisis, which particularly affected the north-bound goods traffic.

A large proportion of the revenue from passenger traffic

on the railway was obtained from the transport of native labour for the mines, the line serving districts with a very numerous Kaffir population, and it has been the object of the Company to foster this traffic by reduced rates and good accommodation.

Throughout almost its entire length the line passes through country rich in soil, and suitable for agricultural or grazing purposes, but which has not yet been developed to any extent. Mealies are grown in considerable quantities, but principally by Kaffirs. The districts where the largest areas are under cultivation are Hammanskraal, Nylstroom, Pietpotgietersrust, and Pietersburg.

A large number of mining poles were conveyed from Pienaar's River, a fair tonnage of limestone from Vaalboschfontein, and of firewood from Nylstroom.

The hot springs at Warmbaths attracted a considerable number of visitors from Johannesburg.

ERMELO RAILWAY.

This is an Anglo-Dutch Company.

Route.—From Machadodorp through Carolina to Ermelo, distance 72 miles. Country between Machadodorp and Carolina broken and rugged, and construction somewhat costly. From Carolina to Ermelo over high veld, and comparatively easy.

Capital.—£300,000, guaranteed by late Government at $3\frac{1}{2}$ per cent., in which Government holds large interest. Line to be built at cost price (approximate, £8000 per mile), and remainder of capital to be raised by debentures.

Construction.—Earthworks and masonry ; now finished to Carolina, and plans and surveys finished for the whole distance. Maximum gradient 1.50, and minimum curve radius 200 metres. About a year required to finish construction. The Company has avoided letting any very large contracts, letting the work out in sections by public tender, and thus securing low rates and efficient supervision.

Probable Traffic.—Between Carolina and Ermelo good coal abounds. Ermelo coal compares favourably with any

other coal in the Transvaal. The position of the line will enable it to compete for the coal market at Delagoa Bay. Wool will be an important source of revenue, as the line passes through a district that now sends much wool by waggon to Natal. Cattle and horses, for which this district is noted, should be another large item. The towns of Carolina and Ermelo, although themselves not large, are the distributing centres of a large population, whose local needs must be supplied by the railway. The majority of goods entering and leaving Swaziland will also pass over the line, as they are now shipped from Machadodorp.

Extension of Line.—The line should be extended to make a junction with the Natal-Johannesburg line near the Natal border, and thus become the connecting link between Durban and Delagoa. Natal, moreover, is the chief wool market, and merchants of the Ermelo district have been in the habit of obtaining their merchandise from there. All the trade of Swaziland would thus be secured. To facilitate Swaziland trade a line should be built from the neighbourhood of Carolina *via* Lake Chrissie into Swaziland, which might eventually make connection with the coast. Another important connection would be Ermelo and Springs, bringing the centre of the high veld into touch with the Rand and with its store of coal and agricultural produce. In connection with the future of the line there must be remembered the large deposits of iron which will some day supply the raw material for a great industry, lying as they do in juxtaposition to good coal. A line has already been surveyed from Machadodorp to Lydenburg, which will help to make the Ermelo Railway a portion of a trunk line, running north and south through the eastern half of the Transvaal, and bringing to it much through traffic to Natal.

SELATI RAILWAY.

Komati Poort to Leydsdorp, 217 miles—only 71 miles constructed.

Share capital	.	.	.	£500,000
Debenture capital	.	.	.	1,500,000

Both shares and debentures guaranteed by the late Government.

The maximum cost for building the line under the contract was £9600 per mile. The Company arranged with a contractor to build at that price, and the contractor soon afterwards sublet the contract to another at £2600 per mile less—the first contractor thereby immediately made a profit of £564,200 without doing any work whatever. Only 71 miles were constructed when the work was stopped. Later the Government repudiated the contract, and a series of lawsuits followed, during the hearing of which some very disgraceful facts came out, clearly showing that members of the Government and Volksraad had received bribes.

If it were not for the hardships that would result to innocent holders of debentures, the new Government should repudiate the whole business and confiscate, and, if deemed advisable, complete the railway.

VRYHEID RAILWAY.

Buffalo River to Vryheid, 39 miles.

Government railway under construction. The contract, which was obtained by Mr. Lukas Meyer, and in which General Botha was reported to have had some interest, provides that the line shall be built for the price of £292,000.

GENERAL RAILWAY POLICY.

The following memoranda on the best railway policy for the future have been contributed by two gentlemen, who have been all their lives connected with railways. One is a manager of a South African railway, and has had large experience in the management of railways in South America. The other is engineer to an important company. The views of both are well worth considering :—

“General Railway Policy for the Country.—The policy should be on the general lines of connecting the country districts with the

Transvaal markets, so that food stuffs may be sent into them, and also to give easy access to the ports for minerals, hides, wool, &c. It is also important to tap the districts from which native labour can be drawn. These are generally very suitable for agricultural purposes, as is instanced by the majority of the local grain consumed in the country coming from them, notably in the districts opened up by the Pretoria-Pietersburg railway, and in those to the east and west of the northern portion of it.

"Up till now the principal object in view has apparently been to make connection with the ports, and little has been done towards facilitating the development of outlying districts by giving them railway communication.

"Provision having thus been chiefly made for the importation of goods, generally highly taxed, would account to a great extent for the high cost of living.

"Some railways which, if built, would, in my opinion, serve the purposes of development of the country, are the following :—

"*Machadodorp to Ermelo*.—(At present under construction.)

"*Pretoria to Zeerust (passing through Rustenburg)*.—This line would pass through a rich cattle and mineral country, and open up lands producing cereals, fruit, tobacco, &c.

"An instance of the want of communication with the chief markets is to be found in the case of forage, which is generally obtainable in the Zeerust district at a third of the price paid for it in Johannesburg and Pretoria.

"Surveys have already been made of the portion of the suggested Pretoria-Zeerust line between Pretoria and Rustenburg, and easy country has been encountered.

"Another useful branch to the important centre of Rustenburg might be made from Krugersdorp.

"*Machadodorp and Pilgrim's Rest*.—This would be rather an expensive line as regards construction, but it would tap a rich grain and cattle country, and also connect the Lydenburg Gold Fields with the trunk line.

"An alternative line to this is one from *Nelspruit to Pilgrim's Rest*, which gives Pilgrim's Rest a much shorter connection with the coast, but against this it does not tap an agricultural or grazing country, or provide the means of transport to the markets for the cattle and agricultural produce of the Lydenburg district.

"*Pietersburg to the Limpopo River*.—This line would open up a large area of country, which at the present time is more isolated than any other part of the Transvaal. From it a very large supply of native labour for the mines could be drawn, and it would furnish a large quantity of mining timber, which is at the present so scarce in the Transvaal.

"This line would also open up rich agricultural and grazing lands. Tobacco has been most successfully grown in the Zoutpansberg district, which is also rich in minerals.

"A further advantage from the construction of this extension would be the bringing of the southern portion of Rhodesia within reach of the port of Delagoa Bay.

"*Middelburg to Springs*.—This line would shorten the distance between Johannesburg and Delagoa Bay by about 40 miles. Its chief advantage would be that it would tap the Middelburg coal district, and would consequently have a large coal traffic. From its position this line should form part of the Transvaal Imperial Railway, and would, I think, be from the first a paying concern.

"*Klerksdorp to Fourteen Streams*.—This line would give a considerably shorter route from Cape Town to Johannesburg *via* Kimberley, besides joining the two largest mining centres in South Africa.

"*Murchison Range*.—In the future no doubt a railway will have to be built to open up the Murchison Range Gold Fields, but whether it would be advisable to do this by extending the Selati Railway, or by an extension from Pilgrim's Rest of the suggested line to that place, is doubtful.

"*Encouragement for Capital to Build Railways by Government Guarantee*.—In this country farming is at present in too backward a state to provide an immediate paying local traffic, and the railways would have to be built with a view to developing the country, not to exploit what is already developed. The country itself is rich enough, but it would be difficult to get people to invest their capital where the present circumstances do not guarantee a certain immediate return. It should therefore, I think, be the policy of the Government to develop districts by guaranteeing the railways which are necessary for this purpose. The result of enabling people to grow and sell their food stuffs in the country would be that the gold of the country would remain in it and produce a lasting agricultural wealth. It would, I think, also follow that the cost of living would be reduced.

"In the course of a few years the development of the districts traversed by the railways should give them such a local traffic that they would not require to draw upon the guarantee of the Government, but would pay their own way.

"*State and Private Railways*.—The present Imperial Military Railway will, without doubt, become a State Railway, and will be a powerful factor in the future development and welfare of the country, controlling as it does the chief trade routes. From the peculiar circumstances of the case the late Netherlands system has become a Government railway, but I do not think that this should prevent private railway enterprise in the country. A healthy competition in the matter of railway working is, I think, decidedly for the benefit of the country, and, provided that the tariffs of all private railways were controlled by the Government, it would be impossible for them to make undue profits. The mining, commercial, and general

interests in regard to railway rates and service should, I think, be safeguarded by a railway board, composed of representatives of the Government and of the business community."

"Railway Influence on Land Values.—I have no exact figures to go on with regard to increase in value, but it may be broadly stated that it does certainly rise in value, the speculators being always anxious to find out the exact routes in order that they may take up options or make purchases. The Dutch farmer himself has already recognised the fact, and no longer opposes railways with his old bitterness. The most enlightened Boers now wish for railways through their farms, and the rest generally agree that it is a desirable thing to have a railway running through their neighbour's ground if not on their own, which would be rather too near. The most valuable farms at present are certainly those situated on the present lines of railway. The effect on town property is always immediate; stands double their value as soon as it is known that a station will be placed close to them.

"Gauges.—South Africa has already adopted a narrow gauge which has been condemned by many engineers as a standard gauge, owing to the difficulties of handling large traffic and running any considerable speed over the main lines. The only advantage of narrow gauges is the possibility of making sharper curves, and thus avoiding earthworks and masonry in difficult country. To further narrow the gauge in the lines now proposed would seem entirely indefensible. These lines are all to tap main centres, and will in time become main routes which will be extended and have feeders. With equal weight of metals, not more than 15 per cent. saving on first costs, if that, could be effected, a sum not justified by the extra cost of working due to transhipment. It must also be remembered that the cost of changing a narrow gauge to the standard gauge is far in excess of the saving in the construction."

The general policy recommended is encouragement of private enterprise in railway building with Government control of costs of construction, maximum rates for traffic, and Government guarantee of moderate interest. On these lines there is no doubt but that capital would eagerly compete for the work, and the country could be opened up without the Government requiring to find the many millions for railways which some writers on the subject have deemed necessary.

The following memorandum of proposed railways for opening up the Zoutpansberg district has been kindly sent by Mr. H. W. Schneider of Pretoria :—

- I. *Pietersburg to Leydsdorp, Selati terminus, distance about 97 miles.*
- II. *Branch Line from Koedoes River to Klein Letaba Goldfields, distance about 35 miles.*
- III. *Branch Line from Klein Letaba Goldfields to Klein Spelonken and Magatoland, distance about 70 miles.*

This branch line could be extended to Rhodesia (Fort Salisbury), and would bring Buluwayo into direct communication with Delagoa Bay, being nearly a straight line.
- IV. *Pietersburg to Magatoland and Klein Spelonken, distance about 70 miles.*

CHAPTER XVIII

SUMMARY OF RESOURCES AND CROWN ASSETS

To summarise the resources of the Transvaal is a difficult task; the best that can be done is to estimate from the available data the probable yearly production. In respect of gold and coal this can be done with considerable accuracy, but as regards other resources it is either very difficult or altogether impossible owing to the absence of reliable data. Only a vague idea can be obtained of the probable yield of diamonds, iron, lead, silver, and other minerals, these mining industries being as yet undeveloped. The same may be said of the land and its products in crops and live stock. No agricultural statistics were ever compiled by the late Transvaal Government. A beginning will be made with the minerals.

GOLD.

The Rand.—In considering the probable yearly production of gold, the estimates will be based on the reduced working costs which would result from the adoption of the policy recommended in previous chapters and finally summarised in Chapter XX., that is, the reduction of taxation in the cost of production. The first inquiry must be directed to the question of what the saving will be. Mr. C. B. Going, reflecting the opinion of Mr. John Hays Hammond in an article in the *Engineering Magazine* in 1900, estimated a difference of 6s. per ton of ore between good and bad government, and an increase in profits of from £7500 to £12,000 per claim. He notes the facts that although the yield of gold was 2s. 2d. per ton less in 1898 than it was in 1892, the dividends paid were at the rate of 13s. 2d. per ton in 1898 as against 8s. in 1892, and whereas only 19 per cent. of the gold was

distributed in dividends in 1892, 32 per cent. was distributed in 1898.

This enhanced profit resulted from improved methods of working and from the comparatively insignificant alleviation of taxation after the Transvaal Industrial Commission had made its report.¹

A reduction of 5s. per ton would bring the range of working costs down to from about 14s. to about 26s. per ton, with an average of about 22s. 6d.; 5 dwts. ore could then be worked at a profit on many mines where the reefs are thick. The enormous amount of available wealth which depends on this 5s. will be realised when it is stated that the cost of the War could easily be paid out of this saving on known areas alone. When in full swing in, say, four or

¹ The improvement in metallurgical science on the Rand has been consistent. Mr. J. R. Williams, in his inaugural address at the meeting of the Chemical and Metallurgical Society at Johannesburg in June 1899, remarked that "ten years ago the only metallurgical operation on the Rand for the recovery of gold was the stamp-mill, and fine gold and amalgam were abundant in the tailings." The cyanide process for the treatment of tailings has entirely altered the history of the Rand, for at one time it was thought it would be impossible to extract the precious metal from ore mined below what is known as the free-milling zone. This zone is passed at a depth of less than a couple of hundred feet. In the cyanide process itself the improvement has been remarkable, the authority quoted stating that "once 8 dwts. tailings were ridiculed, now it is common to get a profit from 1½ dwt. tailings."

The following costs per ton crushed of several leading mines during the month of May 1899 may be regarded as typical:—Low costs—Geldenhuis Deep, 22s.; Geldenhuis Estate, 17s. 6d.; Geldenhuis Main Reef, 17s. 4d.; Ginsberg, 18s. 9d.; Glencairn, 19s. 11d.; Meyer and Charlton, 18s. 2d.; New Kleinfontein, 20s. 3d.; New Primrose, 19s. 1½d.; Rose Deep, 22s.; Simmer and Jack, 20s. 7d.; Treasury, 19s. 9d.; Crown Deep, 23s. 2d. Moderate and high costs—Angelo, 23s. 11d.; Driefontein, 24s. 10d.; New Comet, 26s. 8½d.; City and Suburban, 29s. 1d.; Bonanza, 27s. 6d.; Durban Deep, 35s. 10d.; Henry Nourse, 28s. 11d.; Jumpers Deep, 30s. 2d.; New Heriot, 25s. 8d.; and Robinson Deep, 30s. 2d. Costs at different mines are not comparative, as much depends on local characteristics of the reef. Other factors largely affecting costs are the milling capacity; and, when expressed on a milled tonnage basis, the quantity of waste rock sorted out, which varies from 10 to 45 per cent. For the whole of the Rand the costs in 1897 were put at 29s. 6d., and for 1898 at 28s. 2d. The average was subsequently reduced somewhat, and for 1899 may be put at 27s. 6d.

At the eighth ordinary general meeting of the Village Main Reef the chairman said: "The grade of the ore was improving somewhat, the Main Reef Leader proving richer than was anticipated. With a little further reduction in working costs a considerable portion of the Main Reef would be rich enough to work."

This is specially significant, as the working costs at the Village Main Reef ruled considerably above the average on the Rand.

At the Crown Reef quite 30 per cent. of the ore mined comes from the Main Reef.

In the Ferreira the Main Reef at the 520 feet level assays 12 dwts. over 21 inches, and at the 1320 feet level 25 dwts. over 17 inches.

five years' time, the saving would amount to over £4,000,000 a year.

On the basis of a yearly production of £20,000,000, the rate for 1899, the new policy should result in approximately the following reductions :—

Dynamite, 25s. per case	£375,000
Railway rates, reduced 33½ per cent. (coal and material), say	750,000
Native wages, ¹ 10s. per head per month	600,000
Other reductions, resulting from lowering of general cost of living through reduced railway rates, customs duties, reduced 50 per cent., say	775,000
	£2,500,000

This total reduction, it will be seen, would be approximately 5s. per ton. At the average ore value of 41s. per ton, which has been the value in the past, £20,000,000 would be produced from approximately 10,000,000 tons of ore—10,000,000 tons at 5s. = £2,500,000. Taking, therefore, 5s. as the average measure of reduction, instead of 6s. as estimated by Mr. C. B. Going, the following forecast may be made of the Rand's future production. After the War a period of recuperation must be allowed for. This may be set down at say three years—1902 to 1904 inclusive. Leaving out of consideration the production during the current year, and beginning with 1902, the estimate may be made as follows :—

Years.	Estimate of Tons of Ore Treated.	Estimate of Gold Production in Pounds Sterling.	Estimate of Profit on Old Basis.	Estimate of Increased Profit (5s. per Ton) on New Basis.	Estimate of Total Profit on New Basis.
	Tons.	£	£	£	£
1902 . .	7,500,000	15,000,000	5,000,000	1,875,000	6,875,000
1903 . .	10,000,000	20,000,000	6,700,000	2,500,000	9,200,000
1904 . .	12,500,000	25,000,000	8,500,000	3,125,000	11,625,000
Totals .	30,000,000	60,000,000	20,200,000	7,500,000	27,700,000
Averages .	10,000,000	20,000,000	6,733,333	2,500,000	9,233,333

¹ Kaffir wages in the Rand before the War averaged about 50s. per month.

The table on page 276 presents an estimate of the probable gold production of the Rand (from Randfontein to Holfontein) down to assumed limits of depth for different sections as given in table on page 18, and allowing for 25 per cent. reduction of the estimate (see page 37), but including over £300,000,000 worth of ore from the low-grade Main Reef, which, it is estimated, would be made payable with a 5s. reduction in costs. This estimate of £300,000,000 is not a high one, because there are enormous tonnages of Main Reef throughout the Rand. At the same time, it is difficult to form an idea of the quantities which would prove of a payable grade. It will be seen that the Rand, at present being exploited, would be worked out, down to the assumed limit of depth, in seventy years. The table does not refer to any prospective discoveries, eastward or westward.

The estimate of £35,000,000 as the average annual production for the first decade is below Mr. A. Cooper-Key's estimate of £37,800,000 for 1902, and Dr. Hatch's estimate of £36,000,000. Both of these estimates were made before the War.

It may be recalled that the Witwatersrand series of reefs has been proved along the strike for a distance of nearly sixty miles, and still another geological fact may be noted, viz., that the beds at one time extended much farther north than the present positions of the outcrops. That is to say, there has been considerable denudation, and many thousands of feet of the strata have been worn away. The present outcrops, therefore, are really on a sectional line cut through the mass, and consequently they may be expected to afford a fair average sample of the whole. This expectation so far as actual mining has gone has been realised, a fact which reduces the deductions of the values of the farther and deeper portions of the Rand reefs, not yet actually tapped, to a practical certainty. But some may say that geological deductions do not give a sufficiently solid basis for the calculations of, say, a finance minister. It must be borne in mind that these estimates of future production from the Rand are not in the main made up from geological deductions, but in a greater measure from its known production in the past,

ESTIMATED PRODUCTION AND PROFITS OF THE RAND DURING NEXT SEVENTY YEARS.

Periods of Ten Years.	Estimated Value of Production in each Period of Ten Years.	Estimated Profit in each Period of Ten Years on New Basis of Working Costs (5s. per Ton Reduction).	Estimated Total Cost of Production in each Period of Ten Years on New Basis of Working Costs (5s. per Ton Reduction).	Estimated Value of Annual Production.	ON OLD BASIS.			ON NEW BASIS.		
					Estimated Average Annual Cost of Production.	Estimated Average Annual Profit.	Estimated Average Annual Cost of Production.	Estimated Average Annual Cost of Production.	Estimated Average Annual Increased Profits.	Estimated Total Average Annual Profit.
1st. 1905-1914	£ 350,000,000	£ 160,000,000	£ 190,000,000	£ 35,000,000	£ 23,500,000	£ 11,500,000	£ 19,000,000	£ 4,500,000	£ 16,000,000	£ 16,000,000
2nd. 1915-1924	400,000,000	181,500,000	218,500,000	40,000,000	26,850,000	13,150,000	21,850,000	5,000,000	18,150,000	18,150,000
3rd. 1925-1934	450,000,000	204,250,000	245,750,000	45,000,000	30,200,000	14,800,000	24,575,000	5,625,000	20,425,000	20,425,000
4th. 1935-1944	450,000,000	204,250,000	245,750,000	45,000,000	30,200,000	14,800,000	24,575,000	5,625,000	20,425,000	20,425,000
5th. 1945-1954	400,000,000	181,500,000	218,500,000	40,000,000	26,850,000	13,150,000	21,850,000	5,000,000	18,150,000	18,150,000
6th. 1955-1964	300,000,000	137,500,000	162,500,000	30,000,000	20,000,000	10,000,000	16,250,000	3,750,000	13,750,000	13,750,000
7th. 1965-1974	150,000,000	68,750,000	81,250,000	15,000,000	10,000,000	5,000,000	8,125,000	1,875,000	6,875,000	6,875,000
70 years	2,500,000,000	1,137,750,000	1,362,250,000	35,714,285 (average)	23,942,857 (average)	11,771,428 (average)	19,460,714 (average)	4,482,143 (average)	16,253,571 (average)	16,253,571 (average)

and its stamping-power now, and the additional stamping-power to be added in the next few years. Gold mining on the Rand has not the same element of chance that it has everywhere else. It is more of the nature of a steady industry, and the results can be calculated with extraordinary precision. It has been tersely remarked that gold is not *found* on the Rand—it is *manufactured*. Sufficient of the area has been actually sampled to guarantee the maintenance of the output at the rate in the estimate for at least thirty-five years, and this is as sound a basis as any finance minister could wish for. There is no reason why the farther deeps not yet actually tapped (those from 3500 to 7000 feet) should fall short in yield of gold to those immediately about them, but the estimate can be read in two periods of thirty-five years each, the first calculated to yield £1,400,000,000, and the other £1,100,000,000. The first is assured, and there is little uncertainty about the second.

Outside Districts.

The output for 1898 from districts other than the Rand was as follows :—

Lydenburg	.	.	.	.	£392,378
De Kaap	.	.	.	.	314,792
Klerksdorp	.	.	.	.	199,919
Other districts	.	.	.	.	3,670
					£902,759

The result for the nine months of 1899 showed a considerable ratio of increase. It will be unnecessary to attempt an estimate of the increased output from these districts which may be expected under the new conditions, but generally it may be stated that the increase will be very large. A reduction of 5s. per ton in working costs will bring enormous areas containing low-grade banket ores within the limit of profitable working. The Klerksdorp¹ district especially may be expected to see a great expansion of its mining industry ;

¹ At the Klerksdorp Gold and Diamond Mines working costs, with a dry crushing plant, have been brought down to 13s. 6d., exclusive of Mine Development Redemption.

besides, there are the Heidelberg, the Hex River, and the Rooderand districts. Also the quartz-bearing regions of De Kaap, Lydenburg, Zoutpansberg, all of which would offer quite different prospects of profit than they did in the past. Besides, the encouragement given to prospectors by the suggested alterations in the Gold Laws and by the more equitable incidence of taxation, would give a stimulus to prospecting, and there can be little doubt that many new payable areas would be opened. The data available will not permit of more than this general statement regarding these districts.

COAL.

The statement on page 279 gives an estimate of the probable production within the next thirty years, and it will also convey an idea of the extent and value of the Transvaal coal-fields. The features in the statement of chief interest are those which show the probable yearly production, cost, and profit.

OTHER MINERALS.

Any estimate of future production would be founded on such insufficient data, owing to the small amount of work done in the past, that it would be of little value. It may, however, be remarked that the facts presented in Chapter IX. give good grounds for expecting the establishment of large and profitable industries exploiting these minerals. Especially is this so in the case of diamonds and iron.

RAILWAYS.

The total capitalised value of all the railways in the Transvaal, Government and privately owned, may be estimated at about £11,000,000, of which in the Netherlands system the Government will own an asset worth about £9,000,000. The net estimated revenue under the proposed new tariff in the Government railways is £800,000 yearly.

ESTIMATE OF POSSIBLE FUTURE OF TRANSVAAL COAL.

Periods of Ten Years after Resumption of Work.	Estimate of Total Number of Tons of Good Coal Available.	Estimate of Ten Years' Output.	Estimate of Ten Years' Value (6s. 8d. per Ton).	Estimate of Ten Years' Cost (5s. per Ton).	Estimate of Ten Years' Profit (1s. 8d. per Ton).	Estimate of Average Annual Output.	Estimate of Average Annual Value (6s. 8d. per Ton).	Estimate of Average Annual Cost (5s. per Ton).	Estimate of Average Annual Profit (1s. 8d. per Ton).
1st	Tons. ...	Tons. 30,000,000	£ 10,000,000	£ 7,500,000	£ 2,500,000	Tons. 3,000,000	£ 1,000,000	£ 750,000	£ 250,000
2nd	...	60,000,000	20,000,000	15,000,000	5,000,000	6,000,000	2,000,000	1,500,000	500,000
3rd	...	120,000,000	40,000,000	30,000,000	10,000,000	12,000,000	4,000,000	3,000,000	1,000,000
Totals . .	60,000,000,000	210,000,000	70,000,000	52,500,000	17,500,000	7,000,000 (average)	2,333,333 (average)	1,750,000 (average)	583,333 (average)

If the rate of 12,000,000 tons yearly were kept up, but not exceeded, Transvaal good quality coal would last for 5000 years.

MANUFACTURING INDUSTRIES.

These comprise manufactures of glass, cement, leather, jam, candles, soap, boots, chemicals, explosives, &c., distilleries and breweries. It is impossible to arrive at any definite idea of their probable annual production, but it would certainly be considerably over £1,000,000 in value.

Besides these industries enumerated above, there are the great workshops on the Rand and elsewhere engaged on work required by the mines; and there are also flour-mills, saw-mills, quarries, limeworks, brickworks, and other industries connected with the building trade, which turn out a large value of work each year, but an estimate is impossible.

LAND.

Estimated Area in Morgen.	<i>Government Lands.</i>	
2,956,630	Low Veld, value at say 5s. per morgen	£739,157
1,154,392	High Veld, Middle Veld, at say 15s. per morgen	865,793
5,000,000 (more or less)	Zoutpansberg and Low Country, un- explored, at say 2s. 6d. per morgen	625,000
Total Government Lands, say		£2,229,950

Estimated Area in Morgen.	<i>Privately Owned.</i>	
10,000,000	Low Veld, at say 5s. per morgen	£2,500,000
14,000,000	High, Middle Veld, at say 15s. per morgen	10,500,000
Total privately owned land, say		£13,000,000

	AGRICULTURE.	Estimated Value Annual Produce.
Cereals (mealies, oats, hay, forage, &c.), say		£1,500,000
Tobacco, say		100,000
Fruit, say		75,000
Garden produce and green crops		150,000
Tropical products (coffee, cotton, &c.)		20,000
Woods, forests (timber), large value, but not estimated		...
Total agricultural produce, say .		£1,845,000

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These estimates are based on data of the most meagre description, but still there are reasons for thinking that they are more or less approximate.

LIVE STOCK.

	Before War say	After War say	Estimated Value.
Cattle . . .	1,000,000	200,000 at say £7, 10s. od.	£1,500,000
Horses . . .	200,000	50,000 „ £10.	500,000
Sheep and goats .	1,500,000	400,000 „ 20s.	400,000
Pigs . . .	...	...	...
Total live stock, say			£2,400,000

The same remark as to insufficient data applies to this estimate. During the War the loss in cattle and horses has been enormous.

DAIRY PRODUCE.

Chiefly milk sold from farms near the towns.

CROWN ASSETS.

A semi-official statement of the assets of the late Government of the South African Republic, published at the end of 1898,¹ gave the cash and negotiable assets at six and a-half millions, made up as follows :—

Cash in Treasury	£562,426
Deposited with bankers in Europe	520,000
Negotiable securities (being 454 debentures, &c., Barberton line)	45,854
5480 Netherlands Railway debentures	550,740
3000 Pretoria Pietersburg debentures	255,000
3000 Netherlands Railway	300,000
<i>Shares realisable at Bourse rates :—</i>	
5713 Netherlands Railway	1,485,380
10,000 National Bank S.A.R.	135,000
Amortisation Fund Mortgage bonds	100,000
Loan to Netherlands Railway Company (paid out of Rothschild Loan)	2,000,000
Profits due from Netherlands Railway for 1898, say	700,000
	<u>£6,654,400</u>

Note.—This statement does not touch the capitalised value of the Government share of the Netherlands Railway Company's profit, or the general assets of the State such as Government lands, buildings, telegraphs, &c.

¹ *Standard and Diggers' News* (London edition).

*List of Government Securities and Dividends and Interest
as per late Government's Budget for 1899.*

	Dividend and Interest
10,000 shares in the National Bank at £10, 10 per cent. dividend	£10,000
5758 shares ¹ of 1000 florins or £83, 6s. 8d. each in the Netherlands Railway Com- pany—	
1898 dividend	£27,303
1899 dividend	27,285
1898	£33,582
1899 extra dividends	29,000
	54,588
454 Obligations, Barberton Branch Line, of £100 each, at 5 per cent.	2,270
Loan to Netherlands Railway Company at 5.8 per cent.	116,000
Security money, Selati Railway Company, loaned out—	
Interest accrued, 1898	£1,045
Interest accrued, 1899	1,045
	2,090
Money invested through Labouchere, Oyens & Co.—	
Interest on, 1898	£5,000
Interest on, 1899	3,000
	8,000
Loan to Johannesburg Hospital, £33,000, interest on at 6 per cent.	1,980
War Fund, £110,000, interest on at 3 per cent.	3,300
Orphan Chamber Funds, interest on cash loaned out	4,800
Loan to Netherlands Company on account Klerksdorp Railway, £548,000 at 4 per cent.	—
Shares Pretoria-Pietersburg Railway, £300,000 at 4 per cent.	12,000
Obligations, 4 per cent. Netherlands Railway, at fl.1000—	
1898	£9,885
1899	3,000
	12,885

¹ The Government's holding in these shares appears to have been reduced to 5713.

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	Dividend and Interest.
Security money, Ermelo Railway, £10,000 at 4 per cent.	£400
Loan to Barberton Sanitary Board, £15,400 at 6 per cent.	924
Loan to Barberton Hospital, £1000 at 4 per cent.	40
Loan to Klerksdorp Hospital, £3000 at 6 per cent.	180
Loan to private person, £8000 at 6 per cent., since repaid	—
Poor Burghers' Fund, £150,000 at 3 per cent.	4,500
Loan to Witwatersrand Agricultural Society, £4500 at 6 per cent.	270
Wire Fencing (sold)	200
Sundry (year 1898, £34,383)	129

Total Revenue from Interest and Dividends, &c. £297,138

Of these securities the following may be left out of the new Government assets :—

- (1) All the Netherlands Railway Company's shares and debentures, the railway having been taken over.
- (2) Cash invested through Labouchere, Oyens & Co., which has no doubt since been spent, or at any rate is now beyond reach.
- (3) War funds.

The securities which may be included among the assets of the new Government are the loans to public bodies in the Transvaal and the loans to Poor Burghers, &c., the National Bank shares, and the Pietersburg Railway debentures. There is little chance of any of the other assets being recovered.

Therefore with the taking over of the Netherlands Railway and the State property of the late Republic a new balance of assets and liabilities is brought about. An endeavour is made to present an approximate idea of the new state of affairs in the following statement :—

CROWN ASSETS (*Transvaal*).

Loans to public bodies, Hospitals, Burghers, &c., being chiefly from the Orphan Chamber Funds, Amortisation, P.O. Savings Bank, about	£750,000
Telegraphs, ¹ estimated value	300,000
Railways, say	9,000,000
Buildings and Erven, Government property, say	1,000,000
Bewaarplaatsen	1,750,000
Government gold areas on unproclaimed farms. Impossible to estimate, but very great value now, and in a few years, with free prospecting, would probably amount to many millions	—
3000 Pretoria-Pietersburg Railway shares, say	300,000
10,000 National Bank shares	135,000
Government lands	2,229,950
Estimate of total value of Government assets	£15,464,950

LIABILITIES.

Rothschild Loan, 5 per cent.	£2,000,000
Netherlands Railway, Share and Debenture Holders, say	5,500,000
Orphans' Chamber, P.O. Savings Bank depositors	600,000
Total liabilities, say	£8,100,000

CONTINGENT LIABILITIES.

Pretoria - Pietersburg Railway Shares and Debentures, 4 per cent.	£2,000,000
Selati Railway ² —	
Shares ?, 4 per cent.	500,000
Debentures ?, 4 per cent.	1,500,000
	£4,000,000

¹ Only an estimate without any reliable data.² It is doubtful whether these will be recognised.

CHAPTER XIX

THE PRESENT AND FUTURE ADMINISTRATION

THE system of administration established in the new colonies since the occupation has necessarily been purely military. It has been hinted by the Chancellor of the Exchequer that such an administration cannot be expected to be perfect. Soldiers seem not to have the training necessary to fit them to govern in a civil capacity. Military government is like a hastily put together, badly fitted piece of machinery, grating on the ears and nerves of those accustomed to a machine fitted with ball-bearings and running smoothly.

The principal officer of military government is the Military Governor: he makes all the subordinate appointments, subject to the approval of the Commander-in-Chief. He actuates the machinery of government, with the help of the following officers:—The Commissioner of Police, the President of the Military Tribunal, the District Magistrate, the Financial Adviser, the Legal Adviser, the Civil Commissioner, and the Director of Civil Supplies.

CIVILIAN APPOINTMENTS.

In regard to the appointments made to these positions under the military administration, there has been considerable dissatisfaction. Mr. Chamberlain, in a despatch recently published, stated that "Her Majesty's Government are satisfied that there is no intention of making appointments in the Transvaal on any other grounds than that of fitness for the work to be done." The only conclusion that can be come to after that statement, is that the Imperial Government had not been fully informed on the subject. Some appointments were given to men with no experience whatever of the work they had to do,

and others, while not lacking in experience, were otherwise unsuitable. The appointment of a representative of the Johannesburg Consolidated Investment Company (Barnato Brothers), as Financial Adviser to the Military Governor of Johannesburg, is the most striking instance. The duties of the position required that all the banking accounts in Johannesburg should be open to the financial adviser's inspection if he deemed it necessary. The Consolidated Investment Company is an extensive landowner and landlord in Johannesburg and suburbs. The Company also does a large business in advancing money on loan against security of shares and other property. The appointment of one of its financial managers brought about a state of things very similar to what would happen in London if one firm of stock-brokers or bankers were suddenly given authority to examine into all the business transactions of its rivals and possible clients. Only under military rule could such an appointment be made: under any other form of government—even a Transvaal Republic or a Sultanate—there would be a reform movement or a revolution.¹

Mr. A. B. Markham, M.P., made the statement that "the house of Eckstein and its associated groups had obtained for their representatives practically the whole of the positions of importance under the present military administration in the Transvaal." If for "its associated" were substituted "and other groups," the statement must be corroborated; and if, when introducing the matter before the House of

¹ The following is from *South Africa* of March 9, 1901: "Johannesburg Consolidated Investment Company.—The directors in submitting the accounts for the year ended June 30th last, state that: . . . No credit had been taken for the large amounts outstanding for rents and interests which had accrued since the beginning of the War; but, *when on the restoration of peace such sums are recovered*, they would be duly credited to the Company's profit and loss account."*

Two of the members of the Rents and Interest Commission, appointed by the military, were Mr. Pizzighelli, chief of the survey department of Messrs. Barnato Bros. (Consolidated Investment Company), and M. de Jongh alternate for Mr. Isaac Lewis on the board of the Consolidated Investment Company. Mr. J. A. Hamilton, joint manager of the same Company, was financial adviser to the Military Governor.

The absolute confidence of the directors, shown in the report quoted, that the rents and interest accrued during the War will be recoverable, is very striking if considered together with the above appointments.

* The italics are the writer's.

Commons, Mr. Markham had been content with bringing out the facts, he would have done considerable service to the future Transvaal people. Unfortunately he spoiled his case and theirs by making charges about thieves and swindlers, and he allowed the main point to be lost in a useless side issue.

The manner in which these appointments were made is not difficult to imagine. The Military Governor at first was immediately surrounded by friends, or friends who had friends, and suggestions were made to him, So-and-so is a good man for this and another for that, and not knowing much about the matter himself, and the organisation of government being urgently required, the appointments were made according to the suggestions received. This appears to be the explanation why the majority of the positions were filled from one section of the community, that is, the capitalists and their adherents.

It is not by any means contended that the capitalists should not be consulted, or that they should not have due representation in the new Government. They have large interests. They are mostly capable men, many of them might even be called brilliant, and the majority are no doubt thoroughly loyal to the British Crown. It is both reasonable and expedient, therefore, that they should be able to give full weight to their ideas on the future measures of Government in the new colonies, but the danger is that they, and they alone, will be represented. Under the military it cannot be gainsaid that it has been so, and the hope is that better care will be taken in the future against monopoly of influence by one class.

Only a few of the appointments made were free from the objection of evident unsuitability for one reason or another; among these may be mentioned that of the Mining Commissioner and several of his assistants.

If the Empire had no administrators of experience in governing these appointments might be excused; but there are plenty of able men in England, and also in India, who have spent their lives in similar work to that now required in the Transvaal. The Government could easily have secured a staff of brilliant men, even from South Africa, against whom no sound objection could have been raised. It appears that a mistaken policy has been adopted, which

has bred a feeling of distrust in the new Government which will not easily be removed.

The measures of Government brought about by the counsels of these advisers to the Military Government are in some cases oppressive and unjust, notably that embodied in the proclamation regarding claim and stand licences, which Mr. Chamberlain dismisses as though he did not know its full import. Protests have been made against this by the Cape Town Refugee Committee, and extracts from the pamphlets issued by that body on the subject, which include an opinion from M. J. Farelly, LL.D., Barrister-at-Law, that the proclamation is invalid in English law, are to be found in Appendices M and N.

The inclusion of extracts from these pamphlets in this book does not mean that all the opinions on policy expressed in them are endorsed. They are included, firstly, on account of the legal opinions, and also to show the state of public feeling on the questions under review.

MILITARY APPOINTMENTS.

Some of the positions were filled by officers of the army, a number of whom were eminently suitable. Notable among these are the President and assistants of the military tribunal of Johannesburg. They have done a great amount of work, and by the firm but just administration of the law have commanded the respect and confidence of the people. And in several other departments of semi-military administration the officials have been equally successful, but this cannot be said about all. In many cases undue harshness has been shown to loyalists, simply because they were not subservient enough to satisfy young officers vested with brief authority. The men who would be subservient or make themselves useful in some way have often been unduly favoured, even although they might be known as enemies of Great Britain. Loyal Britishers who, obedient to the High Commissioner's proclamation, abandoned all the goods and wealth they possessed and left the country rather than remain and trade with the enemy, have often been treated with scant courtesy

on their return to the Transvaal. They may have fought with bravery in the ranks of the volunteer forces, but that did not help them much if, dressed in civilian clothes, they dared to come into the presence of some young martinet officer of police without taking off their hats. Under martial law, such as that which exists in Johannesburg, where every movement, and almost every want in life, is subject to the written permission of a district commissioner—some youthful officers required that these permits should be asked for bareheaded and with bated breath, or they would be disdainfully refused—it can be imagined that the smallest display of favouritism in granting permits creates the bitterest feelings.

It appears that it would be better not to place young officers in such positions, but to let them remain at their own work, and fill the posts with volunteers from the civil service at home or elsewhere.

Notwithstanding these criticisms it must be admitted that the Military Government has had a difficult task, and, as was said at the beginning, it is not to be expected that soldiers should make ideal rulers. They have carried on the Government at any rate, and if the mistakes are some of them irritating, they are only temporary, and given good government when the civil power is restored, all the worries of martial rule will speedily be forgotten.

THE NEW ADMINISTRATION.

The next consideration is the future administration.

The *African Review* some time back, in referring to the new administration, appeared to indicate that it has been decided to govern the two colonies by a Governor (Lord Milner) and a Lieutenant-Governor (Colonel Goold Adams), the former to reside in the Transvaal, and the latter in the Orange River Colony. Associated with each there would be an Executive Council, composed of the heads of the various Government departments. It was noted regretfully that no provision has been made for the election of a Legislative Council. The *African Review*, in making this criticism, is certainly in accord

with the opinion of 90 per cent. of the people of the Transvaal and Orange River Colonies.

There are many problems, pressing and urgent, which must engage the immediate attention of the new Governments, and unless it is the desire to govern the countries against the wishes of the people, they had better let them make their voice heard from the first. To do otherwise would be to make the same mistake that the Boer Government made. It is not the desire of the majority of the Uitlanders, any more than it is of the Boer population, to be ruled according to the will of the Capitalist class. Neither is it their desire to be put in swaddling clothes and ruled by men of superior wisdom.

Exceedingly able men who have been trained in the Oxford school are apt to believe that the majority of men cannot properly look after their own interests, and that it is really for their benefit to be ruled by the superior man who knows better what is good for them than they do themselves. This theory may be tried in the Transvaal, and it will most probably prove a failure ; there are already signs of trouble ahead.

It is impossible for even the ablest and most strictly impartial man to get at all shades of opinion in a country. Those at the head of affairs must from the very nature of things be more influenced by men of wealth and position than by others of lesser rank with whom they would never come in touch.

Besides, there is always a possibility of coercion. If the Governor standing alone does not rule according to the wishes of any particular class, the well-known machinery of discredit will be set agoing, reports as to his unfitness will begin to float about London—vague and indefinite—filtering into the minds of men. In the course of a year or two he will be utterly discredited unless he changes and gains the chorus. If he has the support of the whole people constitutionally expressed, this cannot happen. It is difficult to discredit a population.

Preparations for efficient social and political influence are already being made by the financial groups both in

South Africa and London. The appointments made by the Military Governor of Johannesburg, and the general trend of policy since the occupation, have caused disquiet. There is a popular voice on the Rand and in the Transvaal, and a deep feeling prevails of impending oppression and injustice. Under strong militarism the voice might be suppressed possibly for years, but is this wise? Loyalist and Boer alike can be made to obey, but it will be done with sullen resentment. One section of the people to be governed are those who faced ruin in order to obtain the rights of free men, and, after having fought for it, it will surely be unwise to prevent them enjoying the hoped-for reward. The other half have equally faced ruin for a similar idea, although in their case it was spoiled by exclusiveness and ambition, and they too must be reckoned with.

The *African Review* suggested a Legislative Council of twenty-eight members, one half being elected by the mining, commercial, and other bodies, the other half being the nominees of the Crown selected on the lines familiar in most Crown Colonies, two of the members to take seats in the Executive Council.

"A legislative body of this character is one of the early developments after the War."

This suggestion of the *African Review*, so far as it relates to the formation of the Council, is one which would commend itself to every one, but the composition and the method of election suggested will find little support. The mining, commercial, and other bodies which it suggests should elect the Council, are only other names for Messrs. Eckstein, the Consolidated Gold Fields, Barnato Brothers, Mr. J. B. Robinson, and the other Capitalist groups. The Chamber of Mines is not a representative body¹ in any sense of the term, nor is the Chamber of Commerce. Which are the other bodies to which the *African Review* refers is uncertain, but the principle of electing any Legislative Council or any Advisory Board from the institutions named will be unreservedly condemned

¹ That this is the case is now recognised "from within." Mr. Hanau's speech at the first meeting of the Chamber of Mines since the outbreak of war strikes a popular note in claiming that the smaller mining interests should receive adequate representation.

by the great majority of the population of the Transvaal. Let there be a Legislative Council by all means, but let the elected portion of it, which should be more than one-half, be chosen directly by the people. The other method would be at once unjust and useless. It would be just as well to ask Messrs. Eckstein, the Consolidated Goldfields, and Mr. J. B. Robinson to nominate a committee themselves and send the members over to Pretoria to vote in the Council according to their instructions. A Legislative Council to some extent representative of the people is urgently required, and if two of the elected members were chosen to sit in the Executive, so much the better.

The suggestion that the Executive Council should be composed of the heads of departments, or of some of them, with two members selected by the elected members of the Legislative Council, is also commendable. But in the case of several of the departments there should be an Advisory Board as well. Further, the duties of the Council should be mainly executive, and only legislative so far as would lie in the preparation of measures to be brought before the Legislative Council.

The number of departments of State in the new colonies might conveniently be eleven in number, with three Advisory Boards as follows :—

	Department.	Administration.	Boards.
1	Colonial Office	Secretary	...
2	Treasury	Controller	} Advisory Board of Trade
3	Industry and Commerce	Commissioner	
4	Railways, Roads, and Public Works	"	} Advisory Board of Mines
5	Mines	"	
6	Agriculture	"	} Advisory Board of Agriculture
7	Legal	Attorney-General	
8	Natives	Commissioner	...
9	Posts and Telegraphs	"	...
10	Police and Defence	"	...
11	Education	"	...

To these Advisory Boards the elected members of the Legislative Council should elect six of their number, two to each board. It would be their duty to watch the public

interest and see that no legislative or executive measures that might be suggested by the sleepless collective brain of the Capitalists, or the collective brain of any other class, would pass without due notice. To people in England these watchdog duties of the Advisory Boards may seem unnecessary, but in the Transvaal experience has taught that every precaution must be taken. There have been the extension of mynpachts over werf areas, and other encroachments on public rights in the past, brought about by small alterations of the laws apparently of the most harmless description. Two years ago, when the question of better financial administration was being discussed in the Transvaal, a proposition was made to Mr. Kruger that a clever man should be found and placed at the head of the Treasury department. It was suggested that the appointment should be given to Mr. Lippert, who, although he is connected with the Dynamite Monopoly, is admitted on all hands to be an exceedingly able financier. Mr. Kruger said, "Yes. It seems a good plan. I believe Lippert to be a slim kerle,¹ and he would no doubt look well after the money, but what I want to know is, Who is to look after Lippert?" In the Transvaal representative boards would be useful.

The following appointments have already been made to the new Transvaal Executive :—

Mr. Fiddes—Secretary to the Administration.

Mr. Duncan—Comptroller of the Treasury.

Mr. Richard Solomon—Attorney-General.

Sir Godfrey Lagden—Commissioner for Native Affairs.

Mr. Wybergh—Commissioner of Mines.²

There should be as little delay as possible in granting popular representation. Mr. George Farrar struck the right note, in speaking at Newport Pagnell, when he said, "Both

¹ Slim kerle=a smart chap.

² Mr. George Vandeleur Fiddes was educated at Dulwich, and Brasenose College, Oxford. He entered the Colonial Office in 1881, and in 1897 went to the Cape as Imperial Secretary and accountant to Sir Alfred Milner.

Mr. Patrick Duncan was formerly clerk in the Secretary's office Board of Inland Revenue.

Mr. Richard Solomon was a member of the late Cape Ministry under Mr. W. P. Schreiner.

Sir Godfrey Lagden's name is familiar as the Commissioner of Basutoland.

Boers and Loyalists must be taught to govern themselves." Mr. Lionel Phillips read a paper on "The Outlook in South Africa" before the Royal Colonial Institute on 12th June 1900, in which he referred to Crown Colony Governments, and said, "Given a capable Governor, and so active and capable a man as Sir Alfred Milner in supreme authority, I am inclined to favour the more autocratic form to begin with." This called forth the following statesmanlike criticism from the Hon. Henry Copeland, Agent-General for New South Wales: "That is just the kind of Government that will not be satisfactory. As soon as you get Britishers and Australians settled in South Africa they will ask to have a voice in the government of the country. If you tax them they will want to have a voice in the expenditure of the money, or I am no true interpreter of the political opinion of the country." This opinion is more in consonance with the feelings of the inhabitants of the Transvaal than that of Mr. Lionel Phillips.

Something has been said recently in the House of Commons about the difficulties in the way of granting a Legislative Council immediately, and no doubt there are good grounds for some delay, but popular representation of some sort is urgently required. The immediate future bristles with questions of the most vital importance, which can only be settled by the people themselves. For instance, the position must be made clear regarding liabilities in respect to arrear taxes and licences accrued during the War, and in respect to public and private contracts. The well-being of thousands on both sides depends on the decision that may be taken on these questions alone; and as evidenced by Lord Roberts' proclamation of 20th August 1900, and by the Johannesburg Consolidated Investment Company's report of March 1901, there is danger of the interests of the people being jeopardised unless they can give expression and due weight to their wishes.

If it is found unsuitable to grant a partially elective Legislature to begin with, then, as a temporary measure, a general Advisory Board should be constituted. This Board should be elected by the people, and the franchise should

include all British subjects in the Transvaal who are *bona fide* residents, and all the Boers who laid down their arms on Lord Roberts' first proclamation, and who have acted up to their oaths of neutrality, and who are now willing to swear allegiance to the British Crown. The others can get the franchise later; meanwhile the Boer people would be represented. If this policy were adopted it might help considerably towards the pacification of the country. The Boer people who would vote on these conditions would certainly not be in the majority, as appears to be feared by the Imperial Government, and this temporary Board would only have advisory powers.

Mr. Brodrick has stated the intention of the Government to stand by the loyalists. The best way in which he can help the loyalists is by giving them the chance to protect themselves.

These suggestions are put forward with all diffidence, but the arguments supporting them are founded on truth, and they may be found to be worthy of consideration.

Before concluding on the subject, a final word may be said in condemnation of the attacks that are being made on the appointment of Lord Milner as Governor of the new colonies. If the demands of the Boer Commandant-General on this matter were conceded, the Boers would only put it down to weakness, and, far from leading to peace, it would probably prolong the War. The Boer does not understand that sort of magnanimity, and unless it is desired to forego all that the War has been fought to secure, there should be *no concession whatever to the enemy in the field*. An early and lasting peace can only be brought about by a resolute policy.

MUNICIPAL GOVERNMENT.

Johannesburg.—Until within four years ago the town of Johannesburg was under the jurisdiction of the Sanitary Board, which consisted of twelve members elected by the townspeople, presided over by a Government Commissioner. The Board also included two nominees of the Government.

The Government influence was very marked, for in the Commissioner were vested powers for vetoing any resolution passed by the Board. Its constitution was entirely inadequate and unsatisfactory.

After continual agitation and petition the late Government granted to Johannesburg the rights of a Municipality. Some provisions of the Municipal Law are unobjectionable, but, as in the case of the old Sanitary Board, there were grave faults in the constitution of the Council. The Town Council consisted of twenty-four members. Of these twelve were elected by the townspeople—householders and tenants holding or renting property of a certain value being qualified to vote. The other half of the Council (twelve members) consisted of burghers also elected by the townspeople.

It is not to be wondered at, remembering the composition of the Council as sketched, that the bulk of the Uitlanders were not properly represented. It was recognised that no real good could come from representation on such lines, and there was the greatest apathy among the Uitlander population at election times.

The Council was presided over by the Burgomaster, a burgher of the State appointed by the Government, who practically had the power of vetoing anything the Board desired. It will be seen that the town had no voice in the election of its Burgomaster, but the Council had the right of electing four Aldermen. This was ornament, not use, as the Aldermen had no power, their office being merely nominal.

Whenever anything was decided upon by the Council for the benefit of the town as against the interest of any particular firm or clique, the aggrieved parties would rush over to Pretoria and use all sorts of influence with the Executive Council to have the proposals cancelled. In this way useful measures were rendered abortive.

Without having any say in the matters, the townspeople were hampered by concessions granted by the Government. Moreover, many sources of revenue rightly belonging to the town were given away to private individuals by the Government. Amongst these concessions one of the most important, that conferring the right of collecting market dues on produce

sold in Johannesburg market, which should have belonged to the municipality, was granted to concession hunters in the early days of the Rand. The concession is now worked by a company under the control of Messrs. Barnato Brothers. The municipality consequently loses all the market revenues, which go to a monopolist company.

A right was granted to supply the town with water, and this was floated into a company. The original company before efficiently watering the town began first to water its share capital. Debentures were issued to raise money for purchasing machinery. The supply eventually secured might have been adequate for early Johannesburg, but very soon it was necessary to obtain an increase, and after further expense in searching for new sources, the property was finally secured which now supplies the town, but this was done only after further great issues of shares. In order to pay the interest on the debentures and dividends on all the shares, the resident Johannesburger has to pay an exorbitant price for his water, and if he does not pay up promptly the water company need not sue him in the court, because it has the right to summarily cut off his supply. This was one of the first cares of the officials of the Consolidated Investment Company (Barnato Brothers)—the controlling house to which the water company also belongs. As has been noted in a previous chapter, these officials were entrusted with other duties besides. The price charged for water in Johannesburg was much higher than anywhere else in South Africa, an ordinary cottage having to pay £1 a month. Besides, even the present supply will soon again become inadequate. The present water company does not hold an exclusive right, but under the old regime it practically amounted to the same thing.

The sanitary system of the town is antiquated and disgusting, and a proper drainage is urgently required. From time to time different schemes were proposed to the Council, but the matter is a difficult one. Some engineers favoured a water system, others the Lierneur and other different systems in use in various parts of the world. It was felt that it would be dangerous to experiment to the extent of perhaps £500,000, especially with the money of a

town whose best sources of revenue had been given away, and where failure would have been absolutely disastrous. In Johannesburg, whenever a large expenditure was known to be decided upon for anything, intrigues were immediately afoot, each party trying to get some special plant or plan adopted in which they might be interested.

The townspeople were, therefore, very particular in regard to the proposed new sanitary system, and they determined to obtain the best and most disinterested expert opinion before allowing any final decision. The new system of treating sewage by means of filter beds, as described by Lady Priestly in the *Nineteenth Century*, would perhaps be suitable to the special requirements of Johannesburg.

These observations will afford some insight into the municipal position of the town in the past, and they will give some idea of the problem that awaits the future Council. Johannesburg is the most important town in South Africa. It has 120 miles of streets, and only 19 miles of these are macadamised.

The state of municipal affairs in Pretoria is very similar to that described as prevailing in Johannesburg.

CHAPTER XX

THE FISCAL POLICY AND THE WAR DEBT

THE REVENUE

AN endeavour has been made in the previous chapters to show that the basis of taxation in the Transvaal should be changed. The principles advocated have been :—*To tax result, not effort*; to tax for the benefit of the State, not for the benefit of individuals; to tax so as to encourage production, to equalise the burden, and take off the crushing weight at present resting on all those industrial and mining undertakings least able to bear them; to make prospecting free; to ease commerce; to make the poor, whether mines or men, pay no more than their fair share; and to do all this without increasing taxation on the present mines.

A cogent reason for such a policy has been brought out in the fact that by its adoption the low-grade mines and the low-grade ores hitherto unworked in the rich mines would be brought within the sphere of profitable working. These low-grade mines and ores will in the future prove to be one of the principal assets of the country. Another reason is that, by the encouragement given to prospecting, new ground would be opened and large revenues would be obtained from the Government rights in the new properties not yet alienated.

The endeavour in this chapter will be to explain more fully the suggested reformed budget, and to estimate what revenue may be obtained. Where it is possible, guidance will be sought by considering the methods of taxation in other countries, and especially in Great Britain itself.

The first and chief revenue of the country will undoubtedly be that obtainable from the mines. Mr. J. B. Robinson, in his correspondence with Sir William Harcourt

in *The Times*, admits that even under his system of taxation "the gold industry will pay the greater share." The question at issue is, How is it to be paid? Mr. Robinson denounces some people "connected with some of the mines who would like to see a gold tax imposed." "To impose a tax on gold," he says, "would suit their selfish views, with the object of shutting out the competition of the low-grade ores. Such a course would create a discontented population, would menace the whole condition of affairs in the country, would endanger Imperial interests, and force the British Government into a very false position." "The position," remarks Sir William Harcourt, "of incurring the resentment of the gold-mining interest." Mr. Robinson says further, "You will find the revenue that will be obtained from import dues through the great expansion of trade as well as from claim licences, and licences in every branch of trade and also from railways, will increase to millions per annum." Mr. Robinson is wedded to the old vicious system of Transvaal finance. In his blind desire to keep the burden on some one else's shoulders, he does not see the inconsequence of his arguments. His idea is tax anybody and anything, "claim licences and licences on every branch of trade," but spare the mines. His remark about a gold tax shutting down the low-grade mines is clearly absurd. On the contrary, even if the most elementary consideration is given to the subject, it will be seen that the only method of bringing forward the low-grade ores is to reduce the working expenses. This can best and most fairly be done by reducing general taxation, by doing exactly the reverse of what Mr. Robinson suggests, viz., by taking off claim licences, by relieving "licences in every branch of trade," by reducing import duties and revenues from railways, and alleviating every burden on initial effort, and in place of revenue surrendered by this policy, to place a direct tax on the profits of the mines.

In the past the rich mines got off with far less than their fair share of contribution towards State revenue, and the poor mines had to pay the piper. The annual report of the Robinson Gold Mining Company, the largest gold producer on the Rand, for the year 1898 gives the total value of

assets on hand at £3,359,238; total revenue from ore, £679,203; revenue from other sources, £37,049; total, £716,253. Working costs absorbed £273,432, leaving a nett cash profit of £442,821. The amount paid to the Government was £1084 for rents, rates, and licences, being about 0.0003 per cent. of the assets, or 0.002 per cent. on the cash profit. This statement is based on a letter from Mr. Bates Dorsey to the *Standard*.

Contrast the foregoing condition of things with the statement on page 75, Chapter V., where it is shown that a mere prospecting proposition had to pay 40 per cent. of its total working capital directly in claim licences; or consider the bearing of taxation under the old system on a poor and on a rich mine.

Poor Mines Overtaxed.

A mine with ore of a gold value of 34s. 9d. per ton and a profit value of 2s. per ton, as, for instance, the Robinson-Randfontein, pays as follows. To make £5 in profits, fifty tons of ore have to be mined, crushed, and treated. It has been shown (see page 274, Chapter XVIII.) that the excessive price of dynamite and excessive railway rates and customs duties increase the working costs by at least 5s. per ton—indeed, expert opinion has been cited which puts the figure at 6s.

Fifty tons at 5s. = £12, 10s.

A rich mine, say the Bonanza, with ore worth £5 per ton, makes a profit of £5 by mining, crushing, and treating $1\frac{1}{2}$ tons.

$1\frac{1}{2}$ tons at 5s. = 7s. 6d.

Therefore, in making £5 in profits the Robinson-Randfontein pays in taxation £12, 10s., whereas in making £5 in profits the Bonanza only pays 7s. 6d.

Mr. Robinson need not fear that by adopting the new method the Government will be "forced into a false position." His low-grade mines would prosper more on their merits than they have done in the past. The old method would certainly allow the great capitalists to use the new Government, as they used the old Republican Government, for the purpose of maintaining the gold industry as a great financial monopoly;

but it would not help the low-grade mines, unless indeed it is the intention to reduce wages in any case,¹ whether the costs of living are diminished or not. On reflection, financiers will probably adapt themselves to the new conditions. Under the old Pretoria régime there was good excuse for many things, but now their interests will best be served by fair legislation.

By Mr. Robinson's method men with ordinary capital would be for ever barred from entering on the business of gold-mining except and only as servants of Mr. Robinson and others of his class. His "low-grade mine" argument is inexplicable except on the theory that it was only intended to throw dust in the eyes of the public at home.

The fairest and most reasonable tax ever imposed by the Transvaal Government was the 5 per cent. tax on gold profits. Reference has been made to the objection to this tax on the part of the capitalists. The grounds of the objection were that it was not part of a general adjustment of taxation, and that the tax was imposed irrespective of the revenue requirements of the State. The inference is that if the State requires revenue and the tax is imposed as part of a scheme of general reform of taxation, there would be no objection. That is really the position to-day. The new colony requires revenue, and a general readjustment of taxation is urgent. Mr. Rouliot, in his speech of January 12, 1899, already quoted, stated that the revenue obtained from the tax of 5 per cent. would be about £148,580, and he anticipated a revenue of £136,869 from the 2½ per cent. on mynpacht gold. The 2½ per cent. on mynpacht gold should be dropped, and the tax on gold profits should be made general over all. The tax should be raised and lowered according to the requirements of revenue, in the same way as the income-tax is raised and lowered in Great Britain. To begin with, it should be immediately raised to 10 per cent., and if it is found to be necessary, even to 15 per cent., but reference to the statement of estimated revenue on page 318 will show that 10 per cent. will probably be quite sufficient.

¹ The chairman of the Transvaal Chamber of Mines has stated that there is no intention of reducing wages to white employees, even should the cost of living be reduced.

Further, consideration must be given to the high prices at which the shareholding public bought before the War; any excessive taxation would be detrimental to the country's interests. The tax should be collected according to the regulations for assessing profits that may be ordered by the Government. These regulations should be stringent and clear, so as to prevent undue writings off and additions to reserve funds, &c. A reference to the estimate on page 274 will show that a 10 per cent. tax may be expected to yield an average of £923,333 a year in the first three years after resumption of work, and a reference to the estimate on page 276 will show that a 10 per cent. tax on profits on a basis of average annual production, calculated over ten years, 1905-14, will yield an average of £1,600,000 per annum.

Direct Saving to the Mines.

The reduction of indirect taxation will be dealt with under the headings of the various departments they belong to, but attention is called to the table on page 276, where it is shown that on a basis of ten years' work from January 1, 1905, the reduction of taxation advocated in regard to dynamite railway rates and import duties would ensure an annual reduction in working costs of £4,500,000. The nett annual saving to the mines after paying the 10 per cent. tax on profits would be :—

Annual reduction in working costs . . .	£4,500,000
Ten per cent. on £16,000,000, the estimated profit	1,600,000
Nett saving to the mines . . .	<u>£2,900,000</u>

It can be seen that without any injustice to the present mines the tax can be of an elastic character, and it will be quite fair to ask them to contribute another one, two, five, or ten per cent. of the annual profits should the revenue require it. They can easily pay it out of their annual surplus of profits over what they would have made under the old Government. Besides this direct nett annual addition to their profits, the companies would further benefit by the fact

that the reduced working cost per ton would allow of the exploitation of the vast reserves of Main Reef ore of from five to eight dwts. value, which at present are lying useless on their mines, because the working costs would then probably range from 14s. to 26s. per ton, an average of 22s. 6d., and probably even less. Moreover the Main Reef ore body is so thick that it can be very cheaply mined.

The revenue from claim licences on properties proclaimed before the War would most likely keep up to the average collected by the late Government, and it has been shown that any alteration in regard to the titles of these properties would lead to confusion; so, although the system is bad in principle, the best thing is to leave it alone at present so far as past titles are concerned, and to take the revenue, remitting of course the arrears accrued during the War.

An important new source of gold revenue would, however, be created by the sale of the Government shares of gold properties under the suggested new prospecting law. There are the Bewaarplaatsen of an estimated sale value of £1,750,000, and the areas which under the suggested law would remain the property of the Government on the farms situated on the dip of the proved portions of the Main Reef series, which were not proclaimed before the War. These under the proposed new law would be kept out from the general proclamation of the whole Transvaal as an open field for prospecting.

Sales of these areas and other new areas, proved as prospecting advances, as proposed in Chapter VI., would bring in large and yearly increasing sums to the Government. An estimate of £250,000 for the first year and the three following years would not be extravagant. The Bewaarplaatsen alone could furnish this amount for several years.

As time went on the yearly revenue from this source would, to adopt a phrase from Mr. J. B. Robinson, increase "by millions a year," and the exchequer of the Transvaal, far from being in the impoverished condition supposed by Sir William Harcourt, would soon be one of the most independent in the world. As the revenues from this source increase the taxes on profits on mines and other general taxation could be

reduced, so that in the end working costs might be brought down to an average of 15s. or 16s. per ton, thereby enormously increasing the available wealth of the country, and prolonging its mining life. Portions of this surplus could be applied to irrigation works, &c., and other uses calculated for the permanent betterment of the land and people. The taxes on profits on other minerals should be levied by means of a general tax on profits which will be referred to later.

In the chapter on Industry and Commerce, a reduction of 50 per cent. on customs duties, applied discriminately, has been advocated. The duties should be so fixed that protection should be afforded to Transvaal industries, and otherwise they should be made to fall heaviest on the luxuries of life. Agricultural machinery and mining machinery and all the necessaries of life should be admitted free.

In the case of the revenue derivable from railways, a reduction of one-third is proposed. Discrimination as to the classes of goods to be relieved is also necessary in this connection. Coal rates and rates for agricultural produce should be made remunerative, but no more, and generally the tariff should be fixed with the end of encouraging the actual industries of the country.

Land should be dealt with as follows :—A tax of $\frac{1}{4}$ per cent. should be levied on the value of all land in *bona-fide* occupation which is cultivated or otherwise used according to its capabilities.¹ The Commission of Agriculture should decide in all cases whether this condition is fulfilled or not. Where land is not put to *bona-fide* use the tax should be $\frac{1}{2}$ per cent. on the value, the Government having the right to purchase all such land at 4 per cent. above the valuation declared for taxation. Exemption from the land-tax should be granted where the land is offered to the Government for colonisation as proposed in Chapter XII.

The old land-tax was 10s. on a freehold farm or portion of a farm, and 30s. on a quitrent farm or portion of a farm. These taxes should be maintained, and the new tax would

¹ Mr. Willcocks has suggested 4d. per acre per annum, which for the dolomite region, the high veld, and the South Eastern corner of the Transvaal, would bring in £350,000 annually.

bring in an additional revenue of about £50,000 a year. The old war-tax on farms held by aliens should be abolished.

The natives' hut-tax of 20s. a hut, instead of 10s. as formerly, would bring in a revenue of about £100,000, and the other taxes under Law 24 of 1895, £70,000.

Post and telegraphs revenue would probably be similar during the first three years to the past revenue under the Transvaal Government, after that it would increase from year to year.

The next consideration is the advisability of borrowing some ideas of taxation from England, and specially from Sir William Harcourt himself. Death duties should be imposed on the same principle and on the same scale as in England. The estates of holders of Transvaal property or Transvaal shares should be chargeable with estate, succession, and legacy duty on those portions of them which belong to the Transvaal. All companies exploiting the resources of the Transvaal should be required to register as Transvaal companies, and it should be made compulsory that proper share registers should be kept in the country itself. All shares held in Transvaal companies should be liable to legacy duties, and any transfer by will, legacy, or other mode of inheritance from a deceased person should be subject to the duty, and if it is not paid all such transfers should be illegal.

If these duties were not collected in the Transvaal, they would in most cases be collected in England, as was done in the case of the estate of the late Mr. B. I. Barnato. When the amounts are paid in the Transvaal, on account of the Transvaal portion of the estates of a deceased person who resided in Great Britain or elsewhere, the amounts so collected would be deducted from the total duties leviable in Great Britain; that is, the duties would not be levied twice. This is provided for in the English law. An account of death duties as levied in Great Britain, taken from "Hazell's Annual," is to be found in Appendix O. An estimate of the duties derivable from these duties in the Transvaal might be put down at about £150,000 a year to begin with. On the death of any of the great Transvaal financiers an extraordinary increase could be expected, and it would be only fair

that a portion of his wealth should be secured for the benefit of the country from which he derived it. It must not be supposed that the death of any of the South African financiers is desired; it is reasonable, notwithstanding all that has been said in this book, to still wish long life to them individually and to appreciate their energy and work as living men as worth far more than a tithe of their money when dead.

The transfer duty of 4 per cent. on all sales of property should be maintained in so far as the cash consideration is concerned. In the case of the consideration being partly or wholly in shares, no transfer duty should be levied on the shares, but instead there should be a fixed charge of 5 per cent. in shares on the nominal capital of all limited companies in the future or of any increase of capital of old or new companies—the principle of taxing new capital¹ is in accord with British precedent. These shares should be taken by the Government and sold or retained as the Finance Commissioner might think best. The shares should give the Government no control over the working of the company, and should carry no vote at any meeting, but should only be considered the Government tax on the profit of flotation. It has been shown that there are enormous profits made out of company flotations in the Transvaal; in fact, the profits so made are probably greater in amount than those from actual gold extraction, and this system advocated would be a convenient way of taxing them. But the provision that Government should not be entitled to any say in the working of the business of the company is necessary. Undue Government interference and grandmotherly legislation are both detrimental to advancement. This is clearly shown in the backwardness of German colonies, where everything is bound up to the Government. This tax on a basis of flotation of £2,500,000 a year initially, which is not an extravagant estimate, would bring in 125,000 shares, worth from £1 to £5 each. The revenue derivable, taking the average value at only £2 per share, would be £250,000 per annum. Such a

¹ A tax of 7s. 6d. per cent. on the capital of new companies was promulgated in March 1902.

tax would not touch the mines at all, but would be drawn solely from profits on flotation.

Another tax which would be necessary on the reformed budget would be a tax on all profits on investments. The problem is how to obtain this without taxing individual energy as well. A tax on the earnings from work is acknowledged by most political economists to be less desirable than one on profits on the use of wealth already secured. It seems that the end could be gained by means of a tax on all incomes over £1000 a year. Up to that amount what an individual or a company makes in profits of business or salary should be considered as owing to individual energy and should go free. All profits or income above that should be subject to a tax of 5 per cent. Profits and income should be considered to include all profits from speculations in shares and any other way of making money. The profits should be declared annually, according to the regulations that would be framed by the controller of the Treasury, similar to those for the assessment of profits on mines. This tax should not apply to gold companies nor to farming enterprises, but should be levied on all other forms of business, and should include finance companies dealing in shares.

A tax of this nature would be a perfectly fair one, and would yield a handsome revenue. The people of Great Britain pay in the aggravated form of an income-tax, and there is no reason why the people of the Transvaal should not equally pay, especially if in the modified and improved form of an investment tax. This tax should rise and fall according to the requirements of the Treasury. It should be kept in the ratio of as one to two to the tax on gold profits. Theoretically it may seem unfair that gold-mining should be taxed more than any other form of industry, but in the Transvaal the gold-mining companies obtained their holdings on the most liberal terms. They have undoubtedly secured the great bulk of the present assessable wealth of the country. Seeing, firstly, that they avoided paying their fair share in the years before the War, and, secondly, that relief from the burdens of dynamite and railway monopolies will give them large surplus profits over what they formerly made, even with a tax of 10

or 15 per cent. on the future profits, it is only fair that the mines should pay more than less lucrative industries.

The stamp duties levied under the late Government should be maintained. They yielded in 1898 a sum of £285,000. The poll-tax of 18s. 6d. should also be maintained, and should be strictly collected.

All the other taxes and forms of revenue under the late Government should be maintained.

The tax on dynamite should be 5s. per case.

THE EXPENDITURE AND THE WAR DEBT.

Turning now to expenditure, the estimates will be made on the assumption that the cost of Major-General Baden-Powell's Police, the cost charged for the army of occupation, for whatever time these forces are required, and the cost of compensation claims to loyalists will be added to the total sum of the War Debt to be charged to the Transvaal. The *African Review*, in the article already quoted, indicates that this has already been decided on. In the same article it is suggested that £33,000,000 is a sufficient charge to be placed on the new colonies. A great deal depends on the length of time found necessary for the final pacification of the country. Mr. J. B. Robinson's views on this subject are more likely to be correct than those of Sir William Harcourt. South Africans generally agree with the former, that once the Boers give in, and their disarmament is made as complete as possible, and if a British burgher force is organised and made ready for defence, there will be no necessity for keeping up 10,000 police. A much smaller force will be quite sufficient to keep order.¹

Nor is there the slightest reason to present to the British people a picture of a bankrupt Transvaal offering a draft for the War Debt payable "after an interval," all its revenues meanwhile being required to meet its military and administrative expenditure, and with no money for other "undertakings which will cost millions." The Transvaal can produce revenue enough for all these things and the War Debt

¹ Ten thousand police would be equivalent to one policeman to every twenty of the Boer people—men, women, and children—in the new colonies.

besides, if proper government is granted. What the Transvaal people will chiefly desire is to be told the amount of their indebtedness. Egypt has a debt of £106,000,000, and a poverty-stricken population. New Zealand has a debt of £46,000 000, and a population of 756,000. New South Wales has a debt of £63,000,000, and a population of 1,357,000, and so on. The Transvaal is richer than any of these, but doubt is expressed as to its ability to pay a fair share of the War Debt! The Transvaal population (natives included) is over a million, and the Transvaal native is on the average a richer man than the English labourer.

But let it be remembered that although it may be able and willing, the Transvaal should not be asked to pay more than a fair share of the debt. The people of Great Britain, besides gaining through the War the additional security assured them in common with the people of all the Empire, will derive enormous direct profits from the Transvaal. It has been shown that Transvaal mines will probably expend in the next seventy years a purchasing power of £1,400,000,000, representing worth of labour, machinery, and other goods, and this will be payable in gold. Two-thirds of this will go to England and to Englishmen, and in addition there will be the share which her people will take in the profits on the mines, which, if reckoned at one-third, will amount to another £350,000,000. The enormous flow of gold from the Transvaal, which will set in immediately after the War, and continue for the next sixty to a hundred years, will fortify the ascendancy of England in the money markets of the world by enlarging the actual bullion reserve which must always be held against the vast fabric of international credit commerce. England for several centuries has held the chief control over this unmeasurable source of gain, and the vast stores of gold she will obtain from the Transvaal in payment for work and goods should further equip her and enable her to secure and hold a corresponding predominance in the extraordinary development of the world's trade, which is now actually commencing—the development, by means of great national and possibly international trusts. Then the War has not cost more than £150,000,000 to date. The principal cost to England has

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been the time spent by 200,000 of her sons, and the loss to her of the many brave men who have died for her honour and her safety. Taking only the monetary expenses into consideration, it seems that if the Transvaal and Orange River colonies are called upon to pay one-fifth of the net cost—if not above £200,000,000—it will be quite sufficient.

The following is a statement of the cost of the War, including the estimates for the period to April 1903:—

Financial Year 1899–1900.

Ordinary revenue	£119,840,000
Ordinary expenditure	110,505,000
Surplus	£9,335,000
Special war expenditure	23,217,000
Deficit	£13,882,000

Financial Year 1900–1901.

Ordinary revenue	£130,385,000
Ordinary expenditure	119,801,000
Surplus	£10,584,000
Special war expenditure	64,737,000
Deficit	£54,153,000

Financial Year 1901–1902.

Ordinary revenue	£142,998,000
Ordinary expenditure	130,373,000
Surplus	£12,625,000
Special war expenditure	69,830,000
Deficit	£57,205,000

Financial Year 1902–1903 (estimated).

Ordinary revenue	£152,935,000
Ordinary expenditure	134,059,000
Surplus	£18,876,000
Special war expenditure	59,050,000
Deficit	£40,174,000

How the War Expenditure has been Met.

Special war expenditure 1899-1900	£23,217,000
Do. for year 1900-1901	67,237,000
Do. for year 1901-1902	69,830,000
Do. for year 1902-1903 (estimated)	59,050,000
Cost of the war to date	£219,334,000 ¹
Ordinary surplus, 1899-1900	£9,335,000
Do. 1900-1901	10,583,000
Do. 1901-1902	12,625,000
Do. 1902-1903 (estimated)	18,876,000
	51,419,000
	£167,915,000

Borrowings.

War loan	£29,519,000
Treasury bills	13,000,000
Exchequer bonds (about)	23,552,000
Consols at 94½	56,553,000
Do. at 93½	29,920,000
	152,544,000

Balance of war expenditure to April 1903 made up by suspending Sinking Fund (£13,868,000), paid out of Exchequer balance (£2,603,000) and departmental savings £15,371,000

The final table shows the total estimated cost of the War, exclusive of interest charges on the War debt.

Total Estimated Cost of the War.

For 1899-1900	£23,217,000
For 1900-1901	67,237,000
For 1901-1902	69,830,000
For 1902-1903 (estimated)	59,050,000
	£219,334,000

The South African share of the War is not likely to exceed £40,000,000 at the outside, and if to this sum is added another £10,000,000 towards the payment of Major-General Baden-Powell's Police, towards the cost of the army of occupation, and for compensation claims, there would be a total debt of £50,000,000.

If £5,000,000 of this is charged to the Orange River

¹ A small portion applicable to military expenditure in China.

Colony, and £45,000,000 to the Transvaal, neither country would be over-burdened.

In the Transvaal the additional debt arising from the discharge of part of the late Government's indebtedness, including the Rothschild loan and the payments to Netherlands Railway share and debenture holders, would be under £10,000,000, so that the total debt of the new colony would be about £55,000,000. The undertakings "which will cost many millions" (irrigation works, forest-planting, &c.), which Sir William Harcourt refers to in his correspondence with *The Times*, already quoted, could be paid for out of current revenue, as will be seen later. At 3 per cent. interest and 2 per cent. sinking fund, the charge for a debt of £55,000,000 would be £2,750,000 a year. In 1899 the late Transvaal Government estimated an expenditure of nearly one-fourth of this amount for public works alone. This sum is also contemplated by Sir David Barbour. Sir Michael Hicks Beach estimates that "the revenue in a few years will be sufficient to provide for the charge on £30,000,000 in the first instance."

The expenditure side of the late Transvaal Government Budget for 1899 shows a total of £4,370,936, of which £1,216,394 is for salaries. Assuming that the cost of administration will not be materially reduced under the new Government, the various sums required for necessary public services under the late Government will be taken as those likely to be wanted by the new. The arrangement of offices will no doubt be different, and the actual cost could easily be reduced, but it is doubtful if the country would gain by a cheese-paring policy. What the Transvaal wants with its extraordinary natural wealth is the very best administration that can possibly be had for money. The ablest men are only to be had by offering terms which will induce them to take up the service. The financiers pay up to £10,000 and in a few cases even £15,000 a year for skilled engineers and first-class managers. It has been stated that they are annexing men from the British public service. The new Government should not reduce the salaries paid by the old Government, but the selection of the men should be different.

A story is told of ex-President Kruger. Some years ago an old friend and comrade of the late President fell into reduced circumstances. So he came to Pretoria and requested Mr. Kruger to provide him with a position in the Government service. The old man thought for a moment, and then replied: "No, Uncle Piet. I am very sorry, but I cannot do it. I have no vacancy for a head official, and for a clerk you are too stupid."¹

There is money enough to pay for a pure and able administration, and it will be a direct injury to the country if it is not secured. The amount set down in the 1899 Budget for salaries and services of permanent State departments will be retained in the estimate of the new Budget.

There are many items of large amount, however, which can be wiped off. First, there are two items for war, £76,709 and £265,297, which may be taken off, because any expenditure of the new Government under this head would meantime be merged in the War Debt. For the same reason the item of £324,000 for Police is taken off. Then there is an item of £300,000, Customs collected by the Netherlands Railway, this would of course cease. There is another of £698,030 for public works, which will also be deleted and merged in the possible surplus. This great expenditure for public works could, if necessary, be delayed for a year or two. For the same reason the item of £297,422, for railways, could be deducted. Private enterprise would seize the opportunity of building all the new railways that may be wanted. When the State finances are flourishing in a few years' time these railways could be purchased on terms fixed in passing the contracts. The item of railway administration will not be specified in the estimate of the proposed new Budget, but on an estimate of the net profit available for revenue. Then there is a matter of £90,000 for purchase of property. This, it is obvious, is not absolutely necessary. There are also items of interest, £157,518, and repayment of loans, £5550, both of which would be merged in the new public debt.

¹ For the benefit of Afrikaner readers Mr. Kruger's answer, which is much better in the *taal*, is given in that language:—

Mr. Kruger. "Nie, Oom Piet. Ik is jammer maar ik kan die ding nie doen nie. Ik het nie een plek voor een hoofd ambtenaar nie, en voor een klerk is jy te dom."

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Lastly, there are two items, sundry services, £157,518, and special expenditure, £171,940. On referring to the report of the debate over these items in the Volksraad session of 1899, it will be seen that the Progressive members spoke strongly against voting these large amounts to be dispensed by the Government practically at their own pleasure, and they made complaints also of the continual habit of the Government of spending in each year more than the amount voted. Under these headings were included secret-service moneys, &c. What would Sir William Harcourt say in the House of Commons if a similar vague proposal were made in the British Budget? In case it should be found that new services are required under the new Government, or even that an amount for special expenditure may be required, the first will be allowed to stand, and the second deducted. Following is a list of these items of expenditure in the estimates of 1899 which may be left out of the new Budget :—

War Department	£76,709
War Service	265,297
Police	324,060
Customs, Netherlands Railway	300,000
Public Works	698,030
Interest	157,518
Repayment of Loans	5,550
Railways	297,422
Purchase of Property	90,000
Special Expenditure	171,940

£2,386,526

The total estimated expenditure was	£4,370,936
Deduct the total of items taken out	2,386,526

Nett amount required for public
service as estimated, 1899 . . . £1,984,410

The statement which will now be presented will show the estimates of the late Transvaal Government for 1899, and estimates of revenue and expenditure which may be made on the new basis of taxation that has been suggested. A separate column will give the estimated averages for the first three years after the War, and the estimated averages for the ensuing ten years, 1905–14.

THE NEW SOUTH AFRICA

REVENUE.				EXPENDITURE.					
No.		Late Transvaal Government's Estimates for 1899.	New Government, Estimate of Average Annual Receipts for First Three Years, 1902-1904, on Suggested Basis of Taxation.	New Government, Estimate of Average Annual Receipts for Ensuing Ten Years, 1905-1914.	No.	Departments.	Late Transvaal Government's Estimates for 1899.	New Government, Estimate of Average Annual Expenditure for First Three Years, 1902-1904.	New Government, Estimate of Average Annual Expenditure for Ensuing Ten Years, 1905-1914.
1	Import duties	£ 1,100,000	£ 550,000 <i>a</i>	£ 750,000	1	Legislative Bodies	£ 43,635	£ 43,635	£ 60,000
2	Hire of ground	15,632	15,632	17,000	2	Executive Council	15,350	15,350	20,000
3	Quit rents	23,878	30,000	33,000	3	State Secretary's Department	21,248	21,248	25,000
4	" " arrears	7,179	100,000	150,000	4	The Mint	4,215	4,215	5,000
5	Transfer dues	150,000	12,000	15,000	5	Government Commissioners	1,068	1,068	1,000
6	Auction dues	12,000	190,000 <i>b</i>	220,000	6	Superintendent of Native Affairs	9,650	9,650	15,000
7	Trade licences	190,000	290,000	325,000	7	Treasurer-General	15,380	15,380	20,000
8	Stamp duties	290,000	300,000 <i>c</i>	350,000	8	Stamp-Master	8,525	8,525	15,000
9	Prospecting licences	400,000	19,025	25,000	9	Auditor-General	1,771	1,771	2,000
10	Poll tax	19,025	14,453	18,000	10	Chief Inspector of Offices	8,550	8,550	10,000
11	" " arrears	3,483	12,000	16,000	11	Registrar of Deeds	9,098	9,098	11,000
12	Road tax	14,532	120,000	150,000	12	" " Patents	8,125	8,125	10,000
13	" " arrears	2,481			13		1,623	1,623	18,000
14	Railway tax	11,957							
15	" " arrears	2,273							
16	Hut tax (natives)	54,803							
17	" " arrears	24,157							

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18	Natives' tax law . . .	71,298	80,000	100,000	14	Surveyor-General . . .	8,275	8,275	12,000
19	" " arrears . . .	70,577			15	Customs Department . . .	46,925	46,925	60,000
20	Fines, &c.	90,000		100,000	16	Postmaster-General . . .	69,532	69,532	100,000
21	Diggers' licences . . .	73,000		100,000	17	Telegraphs	98,613	98,613	150,000
22	Sale of ammunition . . .	23,000		25,000	18	Justiciary	37,194	37,194	50,000
23	Market dues	1,443		1,600	19	Public Works Department . . .	27,988	27,988	35,000
24	Pound dues	1,639		1,800	20	War Department	76,709	76,709	50,000
25	Interest on securities, including loans to Netherlands Railway, Poor Burghers, &c.	297,138 s	48,000	50,000	21	Education	37,806	37,806	60,000
26	Special receipts	7,505			22	Printing	30,446	30,446	35,000
27	Sundry receipts	18,139			23	Landdrosts	87,435	87,435	100,000
28	Sale of Government property and lands	903,777			24	Civil Commissioners	4,818	4,818	5,000
29	Postal Department	135,750			25	Department of Mines	108,892	108,892	130,000
30	Telegraphs	84,000			26	Special Landdrosts	34,213	34,213	50,000
31	Education	6,590			27	Church	225	225	500
32	Sale of ground	3,000			28	Science Department	10,533	10,533	15,000
33	Machine stand licences	901			29	Commissioner of Police	324,060	324,060	600,000
34	Stand licences	66,621			30	Department	64,357	64,357	70,000
35	Sale of stands	50,000							
36	Prospecting licences	1,045			31	Pensions	5,393	5,393	10,000
37	base metals	2,936			32	Cost of collecting Public revenue	21,550	21,550	30,000
38	Pension tax	2,936			33	Administrative justice	58,720	58,720	70,000
39	Dog tax	7,500			34	Education	248,410	248,410	400,000
40	Post-office Savings Bank	10,000			35	Hospitals	86,000	86,000	100,000
41	Boiler inspections	10,000			36	Police	30,500	30,500	50,000
42	Excise	50,000			37	Gaols	70,000	70,000	100,000
43	War tax (foreign owners—land)	5,355			38	Hire	15,000	15,000	20,000
	Industrial and other concessions				39	Transport	35,300	35,300	50,000
					40	Postal service	72,970	72,970	150,000
	Carry forward	3,612,673	2,579,393	3,042,400			1,860,237	1,459,332	2,774,500

REVENUE.				EXPENDITURE.				
No.	Late Transvaal Government's Estimates for 1899.	New Government, Estimate of Average Annual Receipts for First Three Years, 1902-1904, on Suggested Basis of Taxation.	New Government, Estimate of Average Annual Receipts for Ensuing Ten Years, 1905-1914.	No.	Services.	Late Transvaal Government's Estimates for 1899.	New Government, Estimate of Average Annual Expenditure for First Three Years, 1902-1904.	New Government, Estimate of Average Annual Expenditure for Ensuing Ten Years, 1905-1914.
44	3,612,673	2,579,393	3,042,400	41	Telegraph service.	1,860,237	1,459,332	2,774,500
45	26,036	26,036	26,036	42	Public works	104,300	104,300	170,000
46	...	...	...	43	Customs collected by Netherlands Rail- way Company.	698,030	...	500,000 <i>b</i>
47	31,250	85,000	125,000	44	Sundry services	300,000	...	...
48	7,500	7,500	7,500	45	Owners' share claim	137,579(?)	137,579	200,000
49	4,246	4,246	5,000	46	licences	201,903	201,903	200,000
50	675,000	800,000 <i>f</i>	1,000,000 <i>h</i>	47	Interest	157,518	...	...
51	5%	10%	10%	48	Payment of loans.	5,550	...	...
52	200,000 <i>y</i>	900,000 <i>g</i>	1,600,000 <i>i</i>	49	Natives	1,157	1,167	5,000
53	750	750	750	50	War service	265,297	...	200,000 <i>b</i>
54	100	100	100	51	Purchase of property	90,000	...	100,000 <i>b</i>
55	200	200	1,500	52	Special expenditure	171,940	...	...
56	32,000	32,000	50,000	53	Swaziland	80,000	80,000	100,000
57	...	...	...	54	Railways	297,422	...	...
58	...	...	...	55	Interest on new debt, 3% on £55,000,000	...	1,650,000	1,650,000
59	...	...	...	56	2% Sinking fund	...	1,100,000 <i>w</i>	1,100,000

Brought forward—
Gold concessions, Myn-
pachts
Sale of explosives
Duty on sale of dyna-
mite
State printing
Tax on base metals
Railway income (Art.
34 Netherlands Con-
cession)
Tax on gold profits
Licences (prospecting)
Registration precious
stones, 1/6
Export precious stones,
1%
Swaziland revenue

NOTES ON FOREGOING STATEMENT

- a. 1. *Import Duties*.—On consideration of the enormous imports that will be required to re-stock the country this estimate is low, even on the basis of a 50 per cent. reduction on the old tariff. See Chapter XVIII.
 - b. 7. *Trade Licences*.—These are too high, and should be reduced when the state of the Treasury permits.
 - c. 9. *Prospecting Licences*.—It is assumed that these must be kept on in respect to claims pegged before the War ; but if any plan could be found whereby they could be reduced without creating confusion, it should be adopted.
 - e. 20. *War Department*, omitted for first three years, merged in war debt.
 - d. 29. *Police Department*, omitted for first three years, merged in war debt.
 - f, h. 49. *Railway Income*, based on estimated nett profits, allowing for a reduction of one-third on old tariffs. See Chapter XVII.
 - g, i. 50. *Tax on Gold Profits*, see Chapter XVIII.
 - k. 55. *Tax on Shares, New Flotations*, see present chapter, page 307.
 - l. 56. *Tax on Profits from Investments*, see present chapter, page 307.
 - m. 57. *Death Duties*, see present chapter, page 305.
 - n. 58. *Land Tax*, " " " page 305, and Chapter XI.
 - o. 59. *Sale Government Gold Properties*, see present chapter, page 304, and Chapter VII.
 - p. 42. *Public Works*, omitted during first three years and merged in surplus.
 - q. 43. *Customs collected by Netherlands Railway*, omitted altogether.
 - r. 46. *Interest and Payment of Loans*, merged in general debt.
 - s. 49. *War Service*, omitted during first three years and merged in war debt.
 - t. 50. *Purchase of Property*, omitted during first three years.
 - u. 51. *Special Expenditure*, omitted altogether, see page 315.
 - v. 53. *New Railways Expenditure*, see present chapter, page 314.
 - w. 55. *Sinking Fund*.—If the revenue fell short of expectation, or if this money were otherwise required, the Sinking Fund could be suspended for the first three years.
- | | | |
|---|---|--|
| <ul style="list-style-type: none"> g. 50. <i>Tax on Gold Profits</i>. l. 56. <i>Tax on Investments</i>. | { | <p>These two taxes should rise and fall according to the requirements of the Treasury, <i>g</i> being maintained at double the rate of <i>l</i>. See page 307.</p> |
|---|---|--|

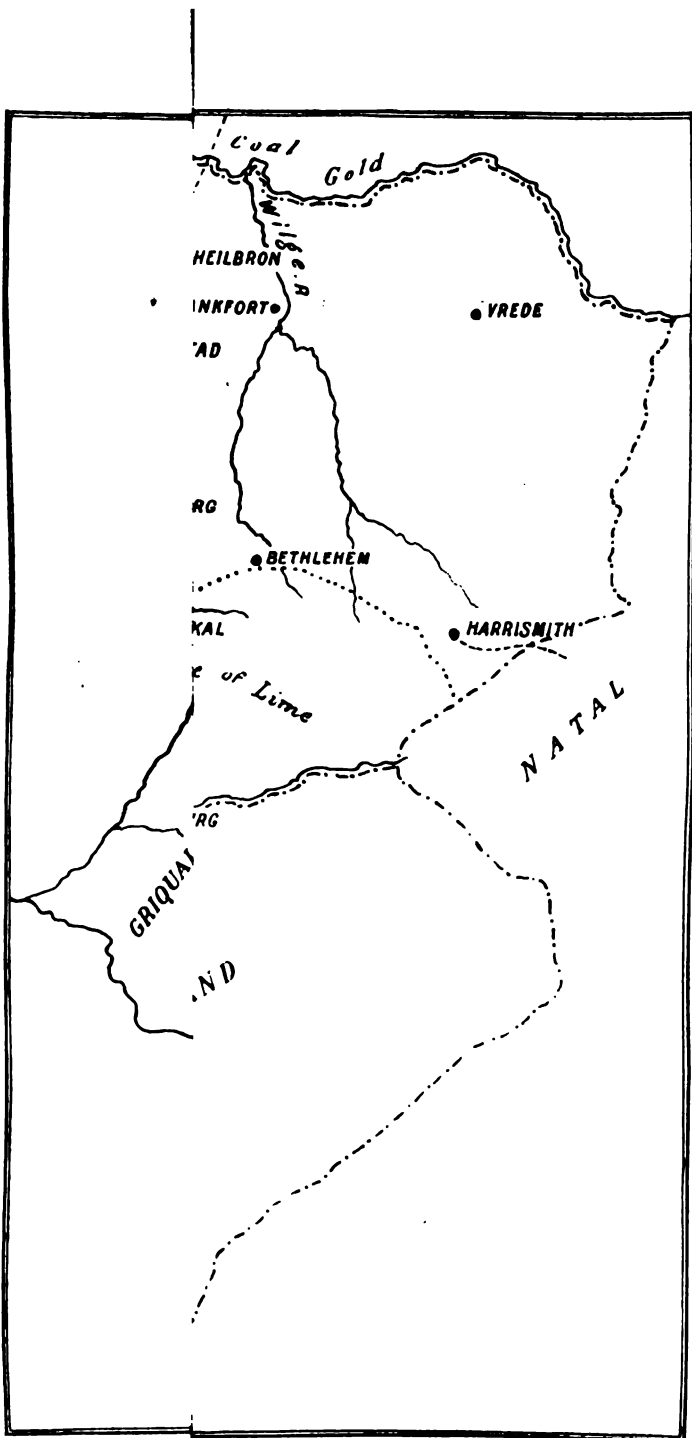
- c, d.* 20 and 29. *War and Police*, included again after first three years, when it is assumed that normal financial conditions will have been restored.
- x.* 60. *The Surplus*.—This could either be applied immediately to Public Works, Irrigation, &c., or for a few years could be kept in reserve, or it could be applied to further relief of taxation.
- y.* 50. *Tax on Gold Profits*.—The late Government's estimate for tax 48 for 1899 did not include mynpacht gold.
- z.* 25. *Interest on Securities*.—For list of these securities, see page 282.

CHAPTER XXI

THE ORANGE RIVER COLONY

THIS valuable territory, in extent about 50,000 square miles, stretches northwards from the Orange River to the Vaal. It has a length of about 360 miles, and an average breadth of about 130. It was first settled by the Boers in 1835. From 1848 to 1854 it was one of the British possessions in South Africa, and during these six years it was known as the Orange River Sovereignty. In 1854, on the report of a British Commissioner that the country was a desert and practically worthless, the British withdrew. A republican government was then instituted, and the country was known as the Orange Free State. Under Presidents Boshoff and Brand the country entered on a period of settled and orderly prosperity. The people increased in wealth and contentment, the laws were just and well administered, and for many years there was no striving to set up an antagonism against the Empire whose borders partially surrounded the State. In 1897, on the representations of the Transvaal Government, the policy of closer union was adopted, and the Republic sealed the compact which was to lead to its destruction.

If the British Commissioner who reported unfavourably on the country could have visited it again just before the War and seen the prosperous trim farm-houses, the great flocks of sheep, the troops of horses and herds of cattle, the huge stacks of unthrashed wheat on the farms, and the immense piles of grain in sacks in the stores of the merchants; if he could have seen a week's production of diamonds from the Jagersfontein mine, or had a view of a month's output from the northern coal-mines, he could then have grasped the measure of error in his report of fifty years ago. The truth is, that while not possessing anything like the extraordinary wealth of the Transvaal the



territory now known as the Orange River Colony must be considered a rich country.

THE LAND.

In the endeavour to convey an idea of its resources a beginning will be made with the land. The area is approximately 15,000,000 morgen, or rather more than 30,000,000 acres. Farms cannot be bought in the better districts under £2 a morgen, and a valuation of £15,000,000 for the whole land of the State would be a low one. The whole area is healthy and eminently suitable for Europeans. The average altitude above sea-level is about 4500 feet. The greater part of the country consists of rolling plains covered with grass in the north, and with grass and karroo bush in the south. South of Bloemfontein the appearance of the country gradually assimilates to that of the northern parts of Cape Colony. The large flat-topped kopjes are more numerous, and the karroo bush represents an increasing proportion of the vegetation. The whole of the area is splendid pasture ground for cattle, sheep, and horses. The grass is not so rank and coarse as that of the Transvaal, and in many districts it is of the short sweet variety on which sheep thrive best. Over the whole area mealies are grown successfully without irrigation, the best and most extensive crops being obtained from the level stretches of alluvial land along the northern rivers, especially along the Vaal. The average production is from eight to ten bushels an acre. The average in Australia is 4.5 bushels. One bag of seed sown produces a return of from forty to fifty bags. Messrs. Lewis & Marks have reaped as much as 40,000 bags of mealies in one year from their Vereeniging estates; there the ploughing is done by means of steam ploughs. There are, of course, occasional failures of crops, caused by visitation of locusts, drought, and hail, but this does not occur more frequently on the average than once in five years. In Australia the droughts are much more severe; an officer in one of the Australian contingents lost 75,000 sheep from drought the year before the War. Such a loss as that could never occur from drought in the Orange River Colony.

Mealies are sown during September and October, and harvested in May. The value varies from 8s. to 20s. per muid, according to the plentifulness or scarcity of the supply, and the distance from the market. The average is about 12s. 6d. on the farms. A muid is 203 lbs. or equivalent to about $3\frac{1}{3}$ bushels. The lowest price at which imported mealies can be supplied under present tariffs and railway rates is 21s.

The Wheat District.

The most valuable agricultural area in the Orange River Colony or in South Africa is that known as the Conquered Territory. This is a strip of country taken by the Free State from the Basutos. It begins at Rouxville and runs north along the Basuto border to Bethlehem, and includes the Wepener, Ladybrand, Ficksburg districts, and parts of De Wetsdorp, Bloemfontein, Winburg, and Bethlehem.¹ Its length is about 130 miles, and its average breadth about 25, the total area being rather more than 3000 square miles, or about 2,000,000 acres. The average rainfall, as taken at Leeuw River, is 20 inches per annum. The rains begin at Christmas and continue until April, with a few good showers in October as well. The regularity of the rainfall appears to be caused by the condensation of clouds from the Indian Ocean as they pass over the Basutoland mountains. This rainfall, occurring as it does just at the right season, permits of wheat-growing without irrigation.

About 75 per cent. of this area is arable land, and, owing to the presence of phosphate of lime, the soil is of extreme fertility.² On some farms crops of wheat have been grown without manure from the same lands for ten years consecutively. The high elevation and consequent cold in winter is beneficial to the growth of wheat; it has been observed that when snow covers the Maluti Mountains in May and June there is always a good crop. The average return is about thirty-five bags of wheat for each bag sown, and this could be greatly increased with careful cultivation. Returns of over a hundredfold have been obtained in exceptional years

¹ See Map, p. 322.

² See Phosphate of Lime, p. 332.

from extra good land. The annual production of wheat in the Conquered Territory during the past five years is estimated at 3,000,000 bushels. The average value on the farm is 5s. 6d. a bushel. The wheat grown is of the best quality, quite equal to that from Australia. It is of the soft variety, hard wheats having been found unsuitable through their liability to shed. The drawbacks are locusts, rust, hailstorms, but failures through these causes in the wheat districts do not occur oftener than about once in eight years. The method of cultivation is most primitive. The land is roughly ploughed with an American No. 75 plough and planted the first year with mealies. The better farmers rotate the crops, one year mealies, and the next year wheat, with an occasional change to green crops, turnips, pumpkins, &c. ; others keep growing wheat from year to year. Wheat is sown in March and April, and harvested in November and December. Besides wheat, large crops of oats are also grown. There is always a good demand in South Africa for the crop, which is made up into sheaves and sold as oat-hay, the price being about 30s. per hundred bundles. Across the border in Basutoland the land is equally suitable for wheat-growing, but the Basutos have run down their lands, and they have no thrashing-machines, with the consequence that Basutoland wheat is inferior to that of the Orange River Colony, and brings a much lower price. In the Conquered Territory the farms are nearly all too large, from 2000 to 4000 morgen or more. The Boer only cultivates enough for his own requirements and something over to provide him with some cash, but he has no idea of farming his land to the extent of its capabilities. On a 2000 morgen farm, perhaps 300 acres will be sown, the rest, for the most part, lies waste, small portions being sometimes given out to Kaffirs or *bywoners* to cultivate on the halves system. The *bywoners*, as a class, being tenants at will, do nothing to improve the land ; they grow just enough to supply themselves with food. If they want some money, they ride transport for a fortnight, and with the £4 or £5 received for that work they buy clothes, &c., and rest until their wants are again pressing. As a class they are an encumbrance and hindrance to the land industry. Labour is plentiful, the large native population in Basutoland supply-

ing more "boys" than the farmers require. The wages are 8d. to 10d. a day with food, consisting of mealie-meal porridge.

Several lines of railway are required to open up the wheat district; some of these were already projected by the late Government. Fruit-growing is successful and profitable all over the Orange River Colony. About 400,000 acres were under cultivation in 1899.

Other Districts.

The other districts of the Orange River Colony come very little behind the wheat districts in value. They comprise probably the best stock-raising districts in South Africa. Before the War the country had about 250,000 horses, nearly a million head of cattle, seven million sheep, and a million goats, and there was plenty of room for more.

In the stock districts, large areas could be cultivated for other crops besides mealies if irrigation were resorted to. The best method appears to be the storage of the water by means of dams. Nearly every farmer has a dam, either large or small, according to the facilities for construction which his land offers, and according to the size of the catchment area available. With the water thus obtained he cultivates five or ten acres of wheat or other crops. This system of dam-making could be greatly extended, and small agricultural farms of from ten to thirty acres could be established all over the country. Large irrigation works that would require the assistance of the Government could be profitably undertaken on the Orange River, the upper reaches of the Riet and Modder Rivers, and the Vaal River. The other Orange River Colony rivers are too deep to allow of dams being made. The provision of money for works of a permanent nature should as soon as possible be considered by the Government, and the suggestions put forward for Government irrigation in the Transvaal would be equally applicable here. Artesian well sinking does not seem likely to bring much success. Two bore-holes have been put down in the Kroonstad district to a depth of 3000 feet, and the water rose to within 15 feet of the surface. By means of pumping a supply of 300 gallons an hour was

obtained from one of the holes, enough to cultivate about three acres. Artesian wells might be useful for securing pure drinking water and water for live stock, but the supplies obtainable would be too small for irrigation.

OWNERSHIP OF THE LAND.

Nearly all the land in the Orange River Colony belongs to the burghers ; only a small percentage is owned by companies. The largest land owners of that class are the De Beers Consolidated Mines and The Vereeniging Estates Company (Messrs. Lewis & Marks). The Government owns 271,176 morgen or about 564,951 acres. A full list of Government farms is given in Appendix P. The largest Government holdings are those of Moroka and Witje's Hoek. The Moroka district lies within the wheat country, and the greater part of the area could be cultivated. The system under which the Free State Government gave out their farms was as follows :—The farms were advertised in the Government Gazette as open to be let for ten years at an annual rental of £50 to £100, and a day of sale fixed. The leases were then put up to auction and sold to the highest bidder. It was stipulated that the leaseholders at the termination of their leases shall get no compensation for improvements—in consequence no improvements are made. On some of the farms in this district there are Kaffir locations which were secured to the Kaffirs when the country was taken over by the Free State Government, and when such farms are let the rights of these Kaffir communities are strictly reserved. Some of the privately owned quitrent farms in the district are subject to similar servitudes providing for Kaffir locations. Natives could inherit property under the late Government, but they could not purchase it. As the leases of the Moroka lands fall in, the Government should survey them into small holdings, and settle them on the village community or some other system, care being taken that sufficient commonage is provided for each community. A good living could be made from fifty morgen of conquered territory land if well farmed. Many Boers own or lease over 3000 morgen, which they allow to lie for the most part waste. The system

of townships which obtained in the Orange Free State was very similar to that proposed for village communities. Unlike the Transvaal townships, whose commonages belong to the State, the Free State town commonages belong to the township community, and are managed by the village Management Boards. The laws of the Free State would not allow of privately owned townships; if a township were to be created, it was stipulated that the lands should be transferred to the community. The village government consisted of first a resident "Vrederechter" or justice of the peace. Afterwards, when a village Board of Management was elected, this "Vrederechter," who was a Government official, became chairman of the body. The village Management Board had full control of all the affairs of the community; managed the common estate and levied rates, and could borrow money for public works on obtaining the consent of the Government. The only objection to the system as existent before the War is that the commonages are too large, and a Township Act should be passed providing for an increase of the number of holdings on arable lands in these townships. The new holdings thus created should be given to settlers. In general the same land policy should be pursued in the Orange River Colony as that suggested for the Transvaal. A land-tax of $\frac{1}{4}$ per cent. on the value of lands properly used, and $\frac{1}{2}$ per cent. on lands allowed to remain waste, should be instituted. The Government should have the right of expropriation at the price of 4 per cent. above the taxable value on all lands not under beneficial occupation; at $\frac{1}{4}$ per cent. the new tax would be about 10s. per 100 morgen as against the quitrent of 2s. for a like area levied under the old Government. In the Orange River Colony the uncultivated arable land might, in fact, be taxed 10 per cent., as it is detrimental to allow the most valuable agricultural asset of the country to lie idle. The wheat lands of the conquered territory could if properly farmed bear a tax of 10s. a morgen instead of 10s. a hundred morgen.

THE PEOPLE.

In the Free State the Boers were more progressive, better educated, more prosperous and enterprising than their brothers

of the Transvaal. A more even general distribution of wealth caused the percentage of very poor burghers to be small. Mortgaging of farms was much less frequent. The Government moneys lent out on mortgage were about £400,000, but the security was in every case sufficient. There was a greater admixture of English blood among the burghers themselves, and burghers and Uitlanders got on well together. Many of the latter threw in their lot with the country under the liberal franchise laws, and the Free State population was growing into a cohesive contented people before the young Afrikanders of the Transvaal instilled ideas of ambition into the minds of the people. The white population before the War would be about 90,000, about 60,000 being Free State born, and 20,000 born in the Cape Colony.

THE NATIVES.

The natives were well treated under the Free State Government. They were saved from oppression on the part of others, and from degradation on the part of themselves. They were protected in their customs and in their rights, and justice was evenly meted out to them; but they were allowed no spirits, and they were kept in their own place. There are about 140,000 natives in the country, and the new Government could not do better than continue the same wise and humane rule over them which was secured by the laws of the Free State. Natives pay a hut-tax of 20s. a year if not employed, and only 10s. a year if they work.

MINERALS.

The mineral resources of the Orange River Colony, although so far not to be compared with those of the Transvaal, still afford promise of great expansion. The mineral laws of the country, in greater measure even than those of the Transvaal, have been against development of its mineral wealth. Owners of land in the Free State have the right to all minerals and precious stones on their properties, but if an owner gives permission for his farm to be prospected, or prospects himself, he is considered to have given his consent to the proclamation

of his farm as a public diggings. And in case he does not continue working it himself, the Government can proclaim it without further question. On proclamation the owner receives half the licences charged on the claims, and the Government retains the other half.

The same policy should be adopted in the Orange River Colony as that advocated for the Transvaal, that is, the whole country should be set open to prospectors. The present system, while intended to benefit the Boer owners, does not in reality do so; in fact it only retards the development of the mining industry until it may suit the millionaire to undertake it. The opinion among the enlightened burghers is this: if it is desired to encourage mining, the Government should take over the minerals, and allow the owners reasonable compensation.

Diamonds.

Diamond-mining is the greatest mineral industry of the country, and is carried on chiefly at three mines.

Jagersfontein, annual production about 290,000 carats, of a value of 35s. per carat. The yield is equivalent to 11 carats per 100 loads. The annual expenditure on costs of winning the diamonds is over £300,000. The diamonds are of very fine quality.

Koffyfontein.—No details of output. The yield is equivalent to about 5 carats per 100 loads.

The Lace Diamond.—A new mine, proved by extensive washings during 1899 to yield about 20 carats per 100 loads. The diamonds are of fine quality.

Robinson Diamond Mine.—This is a mine on which considerable work has been done, but the results have not so far been encouraging.

The Monastery Mine.—This is a mine which has been shut down for years. It is of large extent, and has not been completely prospected.

Coal.

The coal-mines come next in importance to diamonds. Coal is worked at Vierfontein and at Groenfontein, near Klerks-

dorp, and at Viljoens Drift. The coal is inferior in quality to Transvaal Middelburg coal.

Gold.

Gold-mining has not been a success, but more is known now of the Banket formation than was known some years ago. The extensions of the Witwatersrand series of gold-bearing pebble beds enter the country at two places—near Klerksdorp, and east of Vereeniging. They quickly disappear under the coal-bearing stata, but here and there indications crop up farther south. With a liberal prospecting law it is quite possible that an extensive gold industry might spring up.

Salt.

Saltpans or vleis are found in most districts of the Orange River Colony, but chiefly in the districts north and west of Bloemfontein, and covering areas of from five to thirty acres. During the greater portion of the year these pans present a dry and barren appearance, being entirely without vegetation.

Salt-making has hitherto only been carried on by the Boer on whose farms the pan happens to be situated, and then only for supply to himself and neighbours, to whom he sells it at from 4s. to 6s. a bag of 200 lbs.

The mode of manufacture is as follows:—A well is dug on the margin of the pan from 10 to 20 feet deep. Into this well the brine is collected by drains of from 2 to 4 feet deep.

From this well the brine is pumped on to waggon sails, already spread on beds prepared for them. These beds are about 4 inches deep. The brine is there left to the action of the sun's rays, and, should the weather be favourable, evaporation is complete in six to eight days. Several bags of salt may be gathered from each sail. Unless carefully watched, considerable loss is occasioned by the frequent dust-storms so prevalent in the Orange River Colony.

Recently several small attempts have been made to introduce the manufacture of salt on a larger scale, and with success, according to the extent of the venture, &c. There is an excel-

lent opportunity for such enterprise, as the demand is great both in the Orange River Colony and Transvaal, and the quality of salt procurable is good, suitable for table as well as agricultural uses.

Further Notes.

Mr. David Draper, F.G.S., has supplied the following notes on Orange River Colony minerals :—

“Vast and comparatively unexplored stores of *coal* exist in the valley of the Vaal River, both above and below Vereeniging, and extending for a number of miles into the Orange River Colony. Coal has also been discovered in the vicinity of Winburg.

“*Mineral oil* has been reported but not yet developed.

“*Iron ore* is in abundance near Vredefort, and towards the westward near Reitzburg.

“*Diamonds* have been found throughout the length and breadth of the Orange River Colony. No district in it but has yielded diamonds in greater or lesser quantities, and many true pipes, unfortunately not all containing diamonds in payable quantities, have been opened up, especially in the districts of Fauresmith, Jacobsdal, Winburg, and Kroonstad.

“Jagersfontein, Koffyfontein, the Monastery, and especially the Lace Mine on the farm Driekopjes, are prominent.

“With regard to the last-mentioned mine, diamonds were discovered thereon as far back as 1870, yet the pipe from whence they had been transported was not discovered until 1898, and then only after over 4000 prospecting holes had been made in searching for it. This proves the difficulties associated with prospecting for diamonds, especially in a country covered with windblown sand and other surface deposits.

“There is one mineral substance which has not yet been properly investigated in the Orange River Colony—that is, *phosphate of lime*.

“As a rule, the soil of South Africa is devoid of phosphatic matter. That part of the State known as the conquered territory is an exception to the rule. Crops, especially cereals, can be grown there in endless succession without the application of manure. The reason is that there is a considerable amount of phosphate of lime in the rocks which form such a conspicuous feature in the scenery of that country.

“With every summer shower, and during every winter frost, a small portion of this most valuable mineral is released, and carried down to the plains, there to fulfil its destined duty in fertilising the soil. Assays lately taken by the writer from mine rocks taken from

Menschvretersberg gave a half per cent of phosphate of lime ; this would equal about 40 lbs. per cubic yard.

"This quantity is, however, too small to extract, but it is probable that beds containing a workable percentage exist in the country, and will be found in time.

"Some years ago there was a company formed in Harrismith to develop the phosphate beds said to exist near that town, but it fell through owing to lack of public interest in anything but gold, which was at that time the only product of the mineral kingdom thought worthy of support.

"Large and increasing quantities of fertilisers are imported into South Africa yearly, though no doubt more than sufficient exists in parts of the Orange River Colony to satisfy all demands for the future."

RAILWAYS.

The railway system of the country consists of the main Cape-Pretoria line, which traverses its whole length, and a few short branch lines. Total mileage, 418. The railway earned a net profit of £408,000 in 1898. The sum of £1,800,000 is still due to the Cape Colony for the balance of cost of construction ; the total cost was £3,066,647. There is another State railway from Harrismith to the Natal border, 24 miles long ; cost of construction, £265,270.

Extensions of the railway system to tap the agricultural districts and to connect with Kimberley direct are urgently required. If the Government exchequer cannot for the moment afford the money, private enterprise would eagerly take up the business. The Government railway policy should be similar to that recommended for the Transvaal.

COMMERCE.

Orange Free State commerce had made surprising progress for a number of years before the War. In 1898 the imports were £1,190,933, and the exports £1,923,425. Of the exports, Free State produce sent to the Transvaal represented £880,145 ; wool, mohair, skins, and hides, £525,499. In addition to the value of £1,923,425 of general exports, £514,099 worth of diamonds were exported.

The Free State joined the Customs Union several years

ago, and the arrangement seemed to work advantageously to the State. The Free State share of the revenue in 1898 came to £121,411.

ADMINISTRATION.

The late Government of the Orange Free State was in many respects a model government, and formed a strong contrast to that of the Northern Republic.

Compare the salary of £600 a year to the State President with the £8000 a year and coffee-money paid to Mr. Kruger. Liberty, frugality, and progress might have been its watchwords. One of the leading burghers of Bloemfontein recently explained the better laws and better system of government obtaining in the Free State in comparison to those of the Transvaal by asserting that the influence of the earlier officials of the Government, men like Presidents Boshof and Brand, who were trained under British rule in the Cape Colony, set the beginnings of justice and liberty in the youthful State, and their statutes and example lived long after them.

The new administration, in whatever way it may be formed, whether on similar lines to those suggested for the Transvaal or other, will do well to carry on the Government in the same spirit which prevailed for nearly fifty years before the War.

CROWN ASSETS.

Lands	Estimate	£500,000
(A.) Government properties, buildings, &c.	„	150,000
(B.) Telegraphs	„	250,000
(C.) Railways		3,250,000
(D.) Cash lent out on mortgage on good security		408,149

Total assets say £4,558,149

A, B. These estimates are made on very insufficient data.

C. This works out at £7580 per mile, and includes cost of permanent way, rolling stock, stations, and full equipment.

D. As at 31st December 1898.

CROWN LIABILITIES.¹

	£	s.	d.
School funds	200,000	0	0
Orphan chamber	203,017	3	2
Post Office Savings Bank	19,724	17	6
Officials' security funds	795	10	8
Railway debt owing to the Cape Colony	1,800,000	0	0
Total liabilities	2,223,537	11	4

NEW DEBT.

The figures arrived at in considering the subject in Chapter XX. may be set down as follows:—

War debt, including cost of police, say	£5,000,000
Compensation claims and re-stocking farms	2,000,000
Total	£7,000,000

THE FISCAL POLICY.

New taxes should be introduced similar to those suggested for the Transvaal, viz.:—(1) A 5 per cent. tax on the nominal capital of new companies payable in shares; (2) a 5 per cent. tax on profits from investments in other industries than farming; (3) Death duties; (4) a land tax of $\frac{1}{2}$ per cent. on the value of the land not beneficially occupied, and $\frac{1}{4}$ per cent. on land put to proper use.² (See Chapter XX.)

Simultaneously with these additions to taxation, the other burdens should be gradually lightened. These suggested new taxes would not at first bring in large revenues on the Orange River Colony.

Assuming that for the first four years the cost of police will be added to the war debt, the following estimate of revenue and expenditure may be presented:—

¹ As at 31st December 1898.

² Mr. Willcocks, in the Irrigation Report, considers that land in the Orange River Colony could pay an annual tax of 6d. per acre, or £300,000 in gross—this independent of water tax.

ORANGE RIVER COLONY.

REVENUE.					EXPENDITURE.				
No.		1897.	1898.	Estimate for 1902.	No.		1897.	1898.	Estimate for 1902.
1	Quittrents . . .	£ 14,932 12 8	£ 15,427 16 4	£ 15,500	1	Civil departments	£ 53,234 3 2	£ 56,526 16 9	£ 55,000
2	Transfer dues . . .	33,736 0 4	27,935 7 1	30,000	2	Police . . .	13,156 1 11	14,181 19 11	...
3	Customs . . .	162,929 9 9	139,867 7 8	150,000	3	The Church . . .	9,850 0 0	10,087 10 0	10,000
4	Stamp duties . . .	53,975 9 9	63,981 6 7	70,000	4	Education . . .	49,666 19 11	54,531 0 2	55,000
5	Postal department . . .	22,875 7 11	21,584 18 11	22,000	5	Postal department	15,206 2 10	15,865 9 5	16,000
6	Telegraphs . . .	12,224 1 5	11,197 2 3	15,000	6	Telegraphs . . .	14,064 0 10	14,276 15 0	17,000
7	Government dues . . .	4,898 5 9	6,281 8 7	7,000	7	Justice . . .	9,520 11 5	8,662 16 3	9,000
8	Fines . . .	11,066 8 1	7,429 10 8	8,500	8	Gaols and police . . .	12,623 8 3	13,668 17 6	14,000
9	Auction dues . . .	2,554 9 10	3,679 6 7	4,000	9	Printing, &c. . .	9,589 17 10	9,716 17 6	10,000
10	Native poll tax . . .	17,429 10 0	19,685 17 0	20,000	10	Hospitals . . .	14,841 17 5	17,577 15 8	18,000
11	Pound dues . . .	853 2 1	1,491 4 9	1,000	11	Legislature— Volksraad members' salaries . . .	10,589 0 0	13,637 5 0	12,000
12	Diamond fields' dues . . .	10,566 9 6	9,799 1 0	10,000	12	Diamond mines department . . .	726 15 0	444 6 4	500
13	Interest . . .	20,000 0 0	18,879 10 2	20,000	13	New railways and works . . .	250,864 17 11	508,478 2 7	...
14-A	Bridges . . .	2,190 8 1	1,926 3 4	2,000	14-B	Interest . . .	2,671 12 6	2,290 13 5	2,500
14-B	Railway gross profits . . .	504,099 15 6	408,578 3 2	450,000	14	Public works . . .	35,433 3 6	62,625 12 11	...
15	Hire of Government farms . . .	3,573 19 6	7,220 6 0	8,000	15	Department of Agriculture . . .	...	2,070 7 6	2,000
16	Duty (Law Book, 136). . .	1,102 10 4	1,141 6 0	1,000					
17	Licences . . .	543 11 0	707 3 0	600					

[illegible]

ORANGE RIVER COLONY—continued.

REVENUE.				EXPENDITURE.			
No.		1897.	1898.	Estimate for 1902.	No.		Estimate for 1902.
	<i>Brought forward—</i>	£ s. d. 906,023 10 11	£ s. d. 799,757 18 1	£ 942,700		<i>Brought forward—</i>	£ 314,340
						Interest on new debt, say £7,000,000 at 3%.	210,000
						Sinking fund at 2%.	140,000
						Surplus	278,400
	5-C. Postal orders	165,020 15 1	165,191 15 0	...		5-C. Postal orders	...
	5-D. Postal notes.	229 15 0	13,406 10 0	...		5-D. Postal notes.	159,655 2 5
	5-B. Cables.	939 1 2	869 18 2	...		5-B. Cablegrams.	190 9 0
	O.V.S. share in nett profits, Norvalspont			...		Price paid on taking over the Norvalspont	844 15 11
	— Viljoens			...		Viljoens Drift	...
	Drift Railway, December 17, 1890 to December 31, 1896	872,365 0 1	...	...		Railway and rolling stock, &c.	2,564,577 13 8
	Railway loan	1,602,212 13 7	107,787 6 5	...		Balances, December 31, 1897 and 1898	...
	Balances, January 1, 1897 and 1898.	14,365 6 5	225,559 8 5	...			225,599 8 5½
		3,651,162 2 3	1,312,612 16 1	942,700			183,541 6 5½
							3,651,162 2 3
							1,312,612 16 1½
							942,700

NOTES ON THE FOREGOING STATEMENT

The Revenue generally is considered as likely to be much the same under the new Government as under the old. Notwithstanding the continued state of war, the revenue since the British occupation of Bloemfontein has maintained the average collected by the late Government. The new taxes suggested are estimated to yield a total of £100,000.

In the items of income and expenditure, *Postal Notes, Railway Profits, Railway Loan balances*, shown in the late Government's balance-sheet, are chiefly matters of debit and credit, and as they will not affect the new Budget to any extent, they are omitted. In the estimate for 1902 the railway profit only is taken into account, that is the probable profit after payment of interest by the railway itself on the debt owing to the Cape Colony.

In the estimate of *Expenditure* several large items are left out :—
2 *Police*, 17, 18, 20; *War Department*; 30 *Redemption of Loan*—all these are merged in the general debt. 14 *Public Works and New Railways*.—These are taken out, as the first can be delayed for a year or two—urgent works may be provided for out of the surplus—and the second because private enterprise would be available for building new lines under Government guarantee. The *Sinking Fund* for the new debt could, if necessary, be suspended for the first two years.

It is satisfactory to add that the civil administration of the Orange River Colony, apart from the constabulary, “has not cost the Imperial Government a penny” since it was established.

APPENDICES

APPENDIX A

COMPILED BY A. COOPER KEY.

WITWATERSRAND GOLD MINES.

STATEMENT OF CLAIM AREAS, CAPITAL, DATA AS TO REEFS; AND VALUES OF GOLD WON AND PROFITS PER TON IN 1898 AND 1899.

Company.	Claim Area.	Capital, and Debentures (if any).	Width of Reef, Dip, &c.	Value of Recovery Per Ton Crushed.	Profit Per Ton.
<i>Randfontein Section.</i>					
Randfontein Estates Includes the following subsidiaries:— (A) Productive companies—		£ 3,000,000 (nom.) 2,500,000 (issued)	...	...	...
Porges Randfontein	170	500,000	{ Randfontein Leader, 30 in. mil- ling width + West Reef parti- ally explored	(1898) 34/-	5/-
South Randfontein	184½	450,000		(1899) 36/6	9/9
North Randfontein	183	300,000		(1898) 50/6 (1899) 46/9 (1898) 21/9 (1899) not crushing	Loss 9/9
Robinson Randfontein	177	600,000 (nom.) 574,500 (issued)	...	(1898) 35/6 (1899) 33/-	1/9
(B) Non-productive companies—					
Stubbs Randfontein	150	550,000 (nom.) 412,500 (issued)	{ Randfontein Leader, 209 dwts. over 6 in. = say, 35 dwts. over 30 in. + new reef partially ex- plored	...	...
Block "A" Randfontein	171	600,000 (nom.) 547,500 (issued)		...	...
Mynpacht Randfontein	183	750,000 (nom.) 632,500 (issued)	...	...	...
West Randfontein	127	550,000 (nom.) 412,500 (issued)	{ Randfontein Leader, 51.4 dwts. over 3.5 in. = 6 dwts. over 30 in.	...	...
East Randfontein	136	550,000 (nom.) 412,500 (issued)		...	...

Ferguson Randfontein	117	{ 550,000 (nom.) 412,500 (issued)	{ Randfontein Leader, 24 oz. over 6 in. = 96 dwts. over 30 in.	...	...
Van Hulsteyn Randfontein	114	{ 550,000 (nom.) 412,500 (issued)	{ ... Randfontein Leader, 132.8 dwts. over 10 in. and 305 dwts. over 6 in.	...	...
Johnstone Randfontein	95	{ 550,000 (nom.) 412,500 (issued)	{ ... Randfontein Leader, 132.8 dwts. over 10 in. and 305 dwts. over 6 in.	...	...
The development of the Randfontein Leader on the Stubbs, West, East, Ferguson, and Johnstone Randfontein properties has not been sufficiently advanced to enable a reliable estimate of the value of the reef throughout to be given. A trial crushing of 75 tons from the Robinson Randfontein (or "West") Reef gave 61.33 ounces, or 16 dwts. on the plates, indicating over an ounce with cyanide treatment of tailings. On the Ferguson Randfontein the West Reef shows 14 dwts. over 50 in. and 24 oz. over 18 in.; on the Johnstone, 132 dwts. over 10 in.; on Block "A" 66 dwts. over 31 in.; North Randfontein from 15 dwts. to 27 in., width from 9 to 17 in. These assays appear to indicate irregular tenor of reefs, and the best evidence is that of the trial crushing above. Two other reefs (Nos. 3 and 4) have been discovered.					
West Rand Mines	622	{ 500 reef-bearing	{ 265,000 175,000 (debs.)	{ Milling width, Main and South Reefs. 4 ft. 6 in.	{ (1898) 28/6 (1899) 22/9
It is proposed to subdivide this large property into three to be worked by new companies.					
<i>Lancaster—French Rand Section.</i>					
York	66	{ 100,000 (nom.) 66,270 (issued)	{ ... 3½ ft., Botha; 3 ft., Battery	{ (1898) 32/6 (1899) 28/-	{ 11/11/6
Lancaster	291	{ 400,000 (nom.) 351,302 (issued) 180,000 (debs.)	{ 3 ft., Botha; 3 ft., Battery	{ (1898) 38/6 (1899) 37/3	{ 11/11/6
Lancaster West	141; 100 reef bearing on Battery on Reef	{ 300,000 (nom.) 195,000 (issued) 195,000 (debs.)	{ 3 ft. Battery Reef; Botha Reef not opened (d. l.)	{ (1898) not crushing (1899) 27/3	{ 3/-

Company.	Claim Area.	Capital, and Debentures (if any).	Width of Reef, Dip, &c.	Value of Recovery Per Ton Crushed.	Profit Per Ton.
<i>Lancaster Section (contd.)—</i>					
Luipaardsvlei Estate . . .	{ 322 reef-bearing 257	{ 400,000 (nom.) 210,000 (issued) 150,000 (debs.)	...	{ (1898) 26/9 (1899) 19/-	{ ...
Eton (formed March 1899) . .	{ 204	{ 250,000 (nom.) 203,358 (issued)	...	...	...
The Eton Company was formed in March 1899 from part of the Luipaardsvlei Estate. It is proposed to amalgamate the Eton and Windsor mines into a new company, with a capital of £450,000.					
Windsor . . .	{ 83 intact 75	100,000	4 ft. 6 in. to 5 ft.	{ (1898) 35/- (1899) 26/3	{ (Ending Mar. 1899), 15/- (Half year ending Aug. 1899), 6/6
Champ d'Or . . .	40	135,000	Main Reef, 4 ft.	{ (1898) 44/9 (Half year ending June 1899) 51/-	{ 23/-
(D. L.) French Rand . . .	{ 506 reef-bearing 460	{ 600,000 (nom.) 560,000 (issued) 200,000 (debs.)	Main Reef, 4 ft.	{ (1898) 39/6 (1899) 41/3	{ 7/6 5/6
(and D. L.) Tudor (formed June 1899)	261	400,000 (nom.) 340,000 (issued)	Dip, 30°-35°	...	...
Reef expected at depth of between 2000 and 2400 feet. Shaft-sinking commenced.					
<i>Roodpoort Section.</i>					
West Roodpoort . . .	{ 58 reef-bearing 29	...	...	{ (1898) 23/3 (1899) 22/-	{ ...
Princess Estate . . .	{ 150 and freehold 150	{ 200,000 (nom.) 165,000 (issued) 60,000 (debs.)	...	{ (1898) 34/- (1899) 35/-	{ 7/9 5/9
(D. L.) West Roodpoort Deep . .	253	230,000	...	...	...
Non-producing mine.					

(D. L.) Roodepoort Central Deep Mill only crushing for 4½ months. Results not representative of real value of mine.	{ 186 and water right }	{ 325,000 (nom.) 259,335 (issued) 150,000 (debs.) }	{ 2 ft. milling width, S. R. + portions M. R. }	(1899) 31/3	1/-
Roodepoort United M. R.	{ 238* 227 containing the S. R. }	250,000	{ S. R., 3 ft. milling + portions M. R. Actual thickness few inches to 3 ft. Dip, 35° }	{ (1898) 39/9 (1899) 47/- }	18/3 20/3
Durban Roodepoort	{ 97 about 40 claims exhausted }	{ 135,000 (nom.) 125,000 (issued) }	{ 2 ft. S. R., 4 ft. M. R., low grade, worked in very small quantities }	{ (1898) 45/9 (1899) 59/- }	22/3 18/9
(D. L.) Durban Roodepoort Deep	232	{ 350,000 (nom.) 291,000 (issued) 200,000 (debs.) }	{ }	{ (1898) 45/9 (1899) 49/- }	8/- 10/6
Roodepoort ("Kimberley")	{ 289 part D. L. }	175,000	{ }	{ (1898) 25/6 (1899) 20/3 }	-7/3 Loss
(D. L.) East Roodepoort Deep No work has been done.	160	{ 200,000 (nom.) 170,000 (issued) }	{ }	...	...
<i>Vogelstruis—Main Reef Section.</i> Vogelstruis Estate	{ 190 reef- bearing and free- hold }	{ 250,000 (nom.) 200,000 (issued) 100,000 (debs.) }	{ }	{ (1898) not crushing (1899) 34/3 }	...
(D. L.) Vogelstruis Deep In course of development. Reef struck in two shafts. Assays from drives show average of 24 dwts. over 10 in. for the South Reef.	376	{ 400,000 (nom.) 330,000 (issued) 122,500 (debs.) }	{ }	...	...
Banijes Consolidated	{ 729; and freehold }	435,000	3 ft. 6 in. S. R. + M. R.	Not crushing	...
Aurora West United	{ 1364 105 intact }	250,000†	S. R. stopes, 3 ft. 6 in. + M. R.	{ (1898) not crushing (1899) 30/6 (1898) 26/9 (1899) 27/6 }	...
New Unified	{ 92 (77 intact) }	150,000	{ M. R. L. 2 ft. } Milling { 4ft. S. R. 1 ft. 6 in. } width }		2/6 6/9 ...

* Including 83 D. L. claims below Durban Roodepoort Deep. † £35,000 debt.

Company.	Claim Area.	Capital, and Debentures (if any).	Width of Reef, Dip, &c.	Value of Recovery Per Ton Crushed.	Profit Per Ton.
<i>Volgelstruis Section (contd.)—</i>					
(D. L.) Main Reef, West Floated in 1899.	243	£ 450,000 (nom.)	...	...	...
Consolidated Main Reef	253 claims and freehold	800,000 (nom.) 711,500 (issued) 330,000 (debs.) 240,000 (issued)	Stopping { 3 ft. 6 in. S. R. widths { 4 ft. M. R. L. Milling { 2 ft. 6 in. S. R. widths { 2 ft. 6 in. M. R. L.	(Year ending June 1899) 40/-	10/-
(D. L.) Main Reef Deep Floated in 1899.	245	450,000 (nom.) 345,000 (issued)	...	...	...
(D. L.) Main Reef East Floated in 1899.	243	450,000 (nom.) 343,000 (issued)	...	...	...
<i>Langlaagte Star—Paarl Central Section.</i>					
New Crusus	247	450,000 (nom.) 300,000 (issued)	5 ft. M. R. ; 3 ft. S. R.	(1898) 19/9 (1899) 25/6 (1899) 24/3	... 3/3 Loss
Langlaagte Star	80	250,000	...	...	...
Langlaagte Block B	217 : part D. L. and part not reef- bearing	632,500	...	(1898) 25/- (1899) 22/9	5/- ...
Paarl Central	50	400,000	...	(1898) 27/6 (1899) 32/9 Not crushing	(1898), loss -/9
Langlaagte Royal	107	180,000 *	...	...	...
<i>Langlaagte Estate—Crown Reef Section.</i>					
Langlaagte Estate	144 80 reef- bearing	470,000	16 ft. combined thickness	(1898) 31/6 (1899) 27/9	14/3 ...

(D. L.) Langlaagte Deep . . .	184	750,000 (nom.) 650,000 (issued)†	Stopping { 3 ft. 6 in. M. R. L. widths { 5 ft. S. R.	{ (1898) not crushing (1899) 33/6	... About 4/6
Crown Reef . . .	{ 62 reef claims and deep levels }	120,000	Stopping width 6 ft. { M. R. L., S. R.	{ (1898) 51/- (1899) 52/6	27/- 28/-
(D. L.) Crown Deep . . .	169½	300,000	Stopping { 4 ft. 6 in. M. R. L. widths { 3 ft. 6 in. S. R.	{ (1898) 41/3 (Half-year ending June 1899) 37/-	15/- 15/-
<i>Bonanza—City and Suburban Section.</i>					
Johannesburg Pioneer . . .	5½ (exhausted)	21,000	...	{ (1898) 100/- (1899) 78/9	78/6 67/-
This mine has been worked out.					
(D. L.) Bonanza . . .	11	200,000	8 ft. 6 in. { S. R. M. R. L.	{ Year ending (Mar. 1899) 106/-	72/3
Robinson . . .	{ 165; 125 reef claims, 102 intact }	2,750,000 (£5 shares)	S. R. and M. R. L. have yielded 45,000 tons per claim	{ (1899) 98/6 (1898) 73/9 (1899) 71/9	67/- 48/9 48/6
(D. L.) Robinson Central Deep . . .	46	500,000 (nom.) 400,000 (issued)	Probable depth to reef, 1550 ft.	Sinking shaft	...
(D. L.) Robinson Deep . . .	209	950,000 (nom.) 900,000 (issued)	About 7 ft. { M. R. L. S. R.	{ (1898) 58/9 (1899) 47/6	24/6 16/6
Ferreira . . .	{ 58 reef claims }	90,000	Stopping { 3 ft. S. R. widths { 3 ft. 6 in. M. R. L.	{ (1898) 83/- (1899) 84/9	54/- 57/3
(D. L.) Ferreira Deep . . .	142	910,000	Stopping { 50 in. S. R. widths { 54 in. M. R. L. Milling width, 5 ft. 6 in.	{ (1898) not crushing (1899) 70/9	...
Wemmer . . .	{ 30 and 11 Bewaar- plaatsen }	80,000	Reef { 1 ft. M. R. L. width { 2 ft 3 in. S. R. Milling width, say 5 ft. 6 in.	{ (1898) 61/- (1899) 66/6	31/-
Salisbury . . .	{ 17 and 7½ water rights }	100,000	5 ft. S. R.; 3 ft. M. R. L.	{ (1898) 33/6 (1899) 27/3	10/6 4/9
Jubilee . . .	{ 20 about 10 reef claims }	50,000	Stopping { 6 ft. M. R. widths { 3 ft. M. R. L. 3 ft. S. R.	{ (1898) 35/9 (Quarter ending Mar. 1899) 38/-	14/6 16/3

* Debt of £400,000, besides several years' interest.

† Debt, £500,000, owing to Rand Mines, Ltd.

Company.	Claim Area.	Capital, and Debentures (if any).	Width of Reef, Dip, &c.	Value of Recovery Per Ton Crushed.	Profit Per Ton.
<i>Bonanza Section (contd.)—</i>					
(D. L.) Village Main Reef . . .	140	£ 400,000	Stopping { 3 ft. M. R. L. widths { 3 ft. S. R.	(1898) 62/3 { Quarter ending { June 1899) 64/3	31/9 37/6 ...
(and D. L.) Village Deep . . .	186	486,169	...	...	...
Two shafts have been started, reef estimated at about 250 feet. At 1st September 1899 No. 1 shaft was 1180 feet deep, and No. 2 674 feet.					
City and Suburban . . .	{ 203 156 reef bearing	1,360,000 (in £4 shares)	7 ft. 6 in. { M. R. L. S. R.	{ (1898) 44/9 { (1899) 49/6	19/6 23/6
<i>Meyer and Charlton—Witwatersrand Section.</i>					
Meyer and Charlton . . .	35½ reef claims	100,000	{ 6 ft. S. R. 3 ft. M. R. L. 5 ft. M. R.	{ (1898) 31/- { (Half-year ending { June 1899) 35/6 { Quarter ending { Sept. 1899) 37/9	13/- 17/- 19/- 12/6 7/9
(Pt. D. L.) Wolhuter . . .	{ 161 and Bewaar- plaatsen	860,000	From 10 ft. to 12 ft. of rock for mill	{ (1898) 35/9 { (1899) 32/-	nil nil
New Spes Bona . . .	{ 35 about 14 intact	250,000 (nom.) 150,000 (issued)	...	{ (1898) 25/- { (1899) 25/-	nil nil
New Goch . . .	{ 137 reef bear- ing	300,000 and 350,000 (debs.)	{ M. R. 12 ft. { S. R. M. R. L.	{ (1898) 22/- { (1899) 33/9	Loss -/6 11/9
Estimated 35,000 tons a claim except in the East Section, which is expected to yield 120,000 tons per claim.					
(D. L.) { City Deep . . . Wolhuter Deep . . .	{ 190 150	{ 600,000 (nom.) 450,000 (issued) 520,000 (nom.) 392,500 (issued)	...	...	

(and D. L.) { South City South Wolhuter (Suburban Deep Klip Deep	177	{ 540,000 (nom.) 410,000 (issued) 600,000 (nom.) 450,000 (issued) 500,000 (nom.) 375,000 (issued) 500,000 (nom.) 375,000 (issued)	{ }	{ }	...	...	...
	190	{ }	{ }	{ }	...	...	...
	160	{ }	{ }	{ }	...	...	...
	230	{ }	{ }	{ }	...	...	...
No work has been done on these mines yet. The outcrops of the City Deep, South City, and Suburban Deep have yielded an average of 36/- per ton milled; the outcrops of the Wolhuter Deep, South Wolhuter, and Klip Deep, 27/9 per ton—the average of the two groups being 34/6. The first-named three companies will probably yield a profit of about 12/- per ton, and a smaller margin for the Wolhuter Deep, South Wolhuter, and Klip Deep appears probable in the light of past returns from the outcrop mines. There has, however, been great improvement shown in more recent returns from the New Goch, whose ground overlies a portion of these deep areas.							
Henry Nourse	{ 28½ reef claims and 35 Bewaar- plaatsen	{ 125,000	{ }	{ }	...	{ (1898) 62/3 (1899) 57/5	37/- 30/-
(D. L.) Nourse Deep	202	450,000	{ }	{ }	Stoping { 5 ft. Middle Reef widths { 4 ft. 3 in. South Reef	{ (1898) 43/6 (1899) 44/-	12/6 13/6
(and D. L.) South Nourse	290	{ 600,000 (nom.) 523,908 (issued)	{ }	{ }	...	...	...
Reefs expected at 2750 feet. In course of development; two shafts are being sunk; work started July 1899.							
New Heriot	{ 62 about 50 reef claims	112,000	{ }	{ }	{ 4 ft. M. R. 2 ft. S. R. No. 1. 2 ft. S. R. No. 2.	{ (1898) 45/9 (1899) 46/3	21/- 21/6
Jumpers	{ 52 and Be- waarplaatsen	100,000	{ }	{ }	...	{ (1898) 36/- (1899) 34/-	13/10 10/6

Company.	Claim Area.	Capital, and Debentures (if any).	Width of Reef, Dip, &c.	Value of Recovery Per Ton Crushed.	Profit Per Ton.
<i>Bonanza Section (contd.)—</i>					
(D. L.) Village Main Reef . . .	140	£ 400,000	Stoping { 3 ft. M. R. L. widths { 3 ft. S. R.	(1898) 62/3 (Quarter ending June 1899) 64/3	31/9 37/6 ...
(and D. L.) Village Deep . . .	186	486,169	...	...	...
Two shafts have been started, reef estimated at about 2250 feet. At 1st September 1899 No. 1 shaft was 1180 feet deep, and No. 2 674 feet.					
City and Suburban . . .	203 156 reef bearing	1,360,000 (in £4 shares)	7 ft. 6 in. { M. R. L. S. R.	(1898) 44/9 (1899) 49/6	19/6 23/6
<i>Meyer and Charlton—Witwatersrand Section.</i>					
Meyer and Charlton . . .	35½ reef claims	100,000	6 ft. S. R. 3 ft. M. R. L. 5 ft. M. R.	(1898) 31/- (Half-year ending June 1899) 35/6 (Quarter ending Sept. 1899) 37/9 (1898) 35/9 (1899) 32/-	13/- 17/- 19/- 12/6 7/9
(Pt. D. L.) Wolhuter . . .	161 and Bewaar-plaatsen	860,000	From 10 ft. to 12 ft. of rock for mill	...	nil nil
New Spes Bona . . .	35 about 14 intact	250,000 (nom.) 150,000 (issued)	...	(1898) 25/- (1899) 25/-	Loss -/6 11/9
New Goch . . .	137 reef bearing	300,000 and 350,000 (debs.)	12 ft. { M. R. S. R. M. R. L.	(1898) 22/- (1899) 33/9	...
Estimated 35,000 tons a claim except in the East Section, which is expected to yield 120,000 tons per claim.					
(D. L.) { City Deep . . . Wolhuter Deep . . .	190 150	600,000 (nom.) 450,000 (issued) 500,000 (nom.) 392,500 (issued)	...	...	...

(and D. L.) { South City South Wolhuter (3rd D. L.) { Suburban Deep Klip Deep	177	540,000 (nom.) 410,000 (issued)	...	...	...
	190	600,000 (nom.) 450,000 (issued)	...	...	...
	160	500,000 (nom.) 375,000 (issued)	...	...	...
	230	500,000 (nom.) 375,000 (issued)	...	...	...
No work has been done on these mines yet. The outcrops of the City Deep, South City, and Suburban Deep have yielded an average of 36/- per ton milled; the outcrops of the Wolhuter Deep, South Wolhuter, and Klip Deep, 27/9 per ton—the average of the two groups being 34/6. The first-named of these companies will probably yield a profit of about 12/- per ton, and a smaller margin for the Wolhuter Deep, South Wolhuter, and Klip Deep appears probable in the light of past returns from the outcrop mines. There has, however, been great improvement shown in more recent returns from the New Goch, whose ground overlies a portion of these deep areas.					
Henry Nourse	{ 28½ reef claims and 35 Bewaar- plaatsen	125,000	...	{ (1898) 62/3 (1899) 57/5	37/- 30/-
(D. L.) Nourse Deep	202	450,000	{ Stoping { 5 ft. Middle Reef widths { 4 ft. 3 in. South Reef		12/6 13/6
(and D. L.) South Nourse	{ 290	{ 600,000 (nom.) 523,908 (issued)	...	...	...
Reefs expected at 2750 feet. In course of development; two shafts are being sunk; work started July 1899.					
New Heriot	{ 62 about 50 reef claims	112,000	{ 4 ft. M. R. 2 ft. S. R. No. 1. 2 ft. S. R. No. 2.	{ (1898) 45/9 (1899) 46/3	21/- 21/6
Jumpers	{ 52 and Be- waarplaat- sen	100,000	...	{ (1898) 36/- (1899) 34/-	13/10 10/6

Company.	Claim Area.	Capital, and Debentures (if any).	Width of Reef, Dip, &c.	Value of Recovery Per Ton Crushed.	Profit Per Ton.
<i>Meyer and Charlton Section (contd.)—</i>					
Treasury	{ 26 unworked }	£ 540,000 (in £4 shares 54,000 (debs.)*	Stopping { N. R. 4 ft. widths { Mid. R. 3½ ft. } 13½ ft. { M. R. L. 6 ft. }	(1898) 44/- { Quarter ending Mar. 1899) 42/3 }	21/9 20/9
(D. L.) Jumpers Deep	257	535,000	Stopping { Middle Reef, 3 ft. widths { S. Reef, 3 ft. 6 in. { + M. R. }	(1898) 43/2 { (Half-year ending June 1899) 41/6 }	12/6 12/0
(and D. L.) Jupiter	301	600,000 (nom.) 460,000 (issued) 400,000 (debs.)	...	...	...
Two shafts are being sunk, the deepest is down 3790 feet, and the reef has not yet been struck.					
Geldenhuis Estate	{ 60 reef and freehold }	200,000 (nom.)	Stopping width, 12 ft. Milling width, 9 ft.	(1898) 45/9 { (1899) 48/3 }	27/3 28/6
(D. L.) Geldenhuis Deep	212	350,000 (nom.) 300,000 (issued) 144,000 (debs.)	Stopping width, 13 ft. Milling width, 11½ ft.	(1898) 40/3 { (Half year ending June 1899) 41/- }	20/- 21/-
(and D. L.) Simmer and Jack West . Two shafts are being sunk, deepest is down 3408 feet.	200	400,000 (nom.) 300,000 (issued)	...	...	...
Simmer and Jack Prop.	{ 609 325 reef- bearing 193 }	9,000,000 (in £5 shares) 500,000 (debs.) 400,000	...	(1898) 32/- { (1899) 35/- }	11/3 14/-
(D. L.) South Geldenhuis Deep . Two shafts being sunk, and are down 2730 feet and 1892 feet.			...	...	...
(and D. L.) Rand Victoria	300	750,000 (nom.) 630,000 (issued)	...	...	...
Estimated depth to reef 4000 to 4500 feet. Shaft sinking commenced July 1899.					

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New Primrose	{ 160 ; 105 reef bearing }	300,000	{ North, Middle, and Main, say 10 ft. 6 in. }	{ (1898) 32/- (1899) 33/6 }	13/9
May Consolidated	{ 86 ; 50 reef bearing }	290,000	3 ft. North ; 3 ft. Main	{ (1898) 40/3 (1899) 42/6 }	14/- 15/3 (8 months) 21/6
(D. L.) Rose Deep	182	435,000	{ Stopping { 6 ft. 4 in. North width, { 4 ft. 6 in. Middle 17 ft. { 6 ft. 2 in. South (Main yield 90,000 tons per claim.) }	{ (1898) 45/9 (Half-year ending June 1899) 41/6 }	21/6 20/9
(and D. L.) South Rose Deep	266	{ 600,000 (nom.) 515,000 (issued) 300,000 (debs.) }	...	...	...
In forward state of development.					
(3rd D. L.) Rand Victoria East.	273	{ 500,000 (nom.) 375,000 (issued) }	...	...	...
Being developed jointly with the Rand Victoria.					
Glencairn	{ 144 105 reef- bearing }	{ 550,000 (nom.) 500,000 (issued) 140,000 (debs.) }	...	{ (1898) 29/3 (1899) 30/- }	11/9 12/-
(D. L.) Glen Deep	183	600,000	{ Stopping { 3 ft. 6 in. Main Reef. widths { 3 ft. 6 in. Middle Reef. 3 ft. North Reef. }	{ (1898) 44/- (Half-year ending June 1899) 44/- }	17/6 17/-
(and D. L.) Simmer and Jack East	299	{ 700,000 (nom.) 600,000 (issued) 500,000 (debs.) }	...	...	...
In forward state of development.					
Witwatersrand ("Knights")	{ 340 and freehold }	{ 375,000 (nom.) 352,000 (issued) }	...	{ (1898) 30/3 (1899) 28/6 }	8/6 5/6
(D. L.) Knights Deep	274	{ 550,000 (nom.) 443,000 (issued) 400,000 (debs.) }	{ Stopping { N. R., 3 ft. 6 in. widths { M. R., 3 ft. 6 in. }	...	...
In initial stage of development.					
(and D. L.) Knight Central	428	{ 525,000 (nom.) 415,000 (issued) }	...	...	...
In forward state of development.					
(3rd D. L.) South Knights.	451	{ 650,000 (nom.) 500,000 (issued) }	...	...	...
Reefs expected to be struck at 4000 feet. Work not started.					

* Reduced to £27,000 by sale of Simmer and Jack West Shares.

Company.	Claim Area.	Capital, and Debentures (if any).	Width of Reef, Dip, &c.	Value of Recovery Per Ton Crushed.	Profit Per Ton.
<i>Meyer and Charlton Section (contd.)—</i> (D. L.) Witwatersrand Deep . . . Mine in forward state of development, eleven levels opened.	274	£ 450,000 (nom.) 357,900 (issued) 200,000 (debs.)	...	...	...
<i>Balmoral—Blue Sky Section.</i> Balmoral . . .	{ 85; about 45 reef bearing }	240,000	...	{ 1898) 23/- (1899) 16/3 }	Loss Loss
Ginsberg . . .	39	160,000	...	{ 1898) 42/- (1899) 39/9 }	22/6
Driefontein . . .	{ 193; 113 reef bearing }	275,000 (nom.) 100,000 (debs.)	Estimated tonnage in mine 4,105,468	{ 1898) 38/6 (1899) 40/- }	20/9 14/6
(D. L.) Driefontein Deep . . . Formed March 1899. No work done.	356	500,000 (nom.) 381,000 (issued)	...	...	16/-
Angelo . . .	{ 162; 88 reef bearing }	275,000 (nom.)	Estimated tonnage in mine 3,196,262. Dip, 50°-55°	{ 1898) 59/3 (1899) 56/- }	39/- 32/6
New Comet . . . It is proposed to enlarge the areas of the Angelo, Driefontein, and Comet mines by amalgamating with each company the dip ground owned by the East Rand Proprietary Mines—the parent company. Resolutions providing for the necessary increases of capital have been carried.	{ 93; 82 reef bearing }	225,000 200,000 (debs.)	Estimated tonnage in mine 3,200,363	{ 1898) 39/- (1899) 36/- }	17/- 13/-
Agnes Munro . . .	19	100,000 (nom.) 93,000 (issued)	{ N. R., 56,280 tons developed, giving 11.1 dwts. S. R., 21,620 tons developed, giving 14.2 dwts. 102,700 tons developed, giving 28.4 dwts. per ton. Dip, 35° }	...	...
Cason Block . . .	29	...	...	...	...
Cinderella . . .	72	100,000	...	...	...

New Blue Sky	76	150,000			
These areas will be re-formed and with ground belonging to the East Rand Proprietary Mines will constitute the working areas of new companies. A fair amount of development work has been done on the Agnes Munro and Cason Block areas.					
(D. L.) Angelo Deep	306	500,000 (nom.) 435,000 (issued)			
Two shafts are being sunk. The west has been sunk 2468 feet, and a borehole put down to nearly 3900 feet from the bottom of the shaft had not cut the reef. East shaft 2300 feet.					
(D. L.) Cinderella Deep	289	500,000			
Estimated depth to reef 2900 feet. A main central shaft has reached a depth of 518 feet and a borehole has been started. Estimated value of reef, 45/- to 50/-. Estimated profit, 20/-.					
<i>Boksburg—Apex Mines Section.</i>					
Boksburg Gold Mines	1117	650,000 (nom.) 625,000 (issued)			
Main Reef has been located by means of bore-holes.					
East Rand Extension *	192 and 470 D. L.	300,000 (nom.) 250,000 (issued)			
Main Reef Series struck in June 1899 in boreholes. No. 1 borehole showed the reef about 1350 feet, with a value of 29 dwts. over 40 inches, and No. 2, 33 dwts. over 254 inches.					
Apex Mines	Freehold of the farm Reitfontein (3577 morgen)	150,000			
Results on the gold section of the property have been disappointing; reefs have been located, and in 1899 developments were encouraging. Company makes a good profit from working coal.					

* See section of Borehole, Appendix B.

Company.	Claim Area.	Capital, and Debentures (if any).	Width of Reef Dip, &c.	Value of Recovery Per Ton Crushed.	Profit Per Ton.
<i>Benoni—Modderfontein Section.</i>					
Benoni Developing mine.	288 (Freehold of the farm Brakpan (1917 morgen))	£ 250,000 (nom.) 204,000 (issued)	M. R., 3 ft. 6 in; M. R. L., 1 ft.	...	...
(D. L.) Transvaal Coal Trust . . . Boring for the Main Reef series—ex- pected at about 2700 feet.		500,000 80,000 (debs.)	...	...	...
Chimes West Developing mine.	129	200,000 (nom.) 178,000 (issued)	...	...	...
New Kleinfontein	151	275,000 (nom.) 231,250 (issued) 100,000 (debs.)	Stoping width about 6 ft. 6 in. { for M. R. and Leader	(1898) 30/- (1899) 31/9	7/9 11/6
(D. L.) Kleinfontein Central	163 (136 intact reef claims, and freehold)	250,000 (nom.) 225,000 (issued)	...	...	...
Van Ryn		400,000	Main Reef, 3 ft.; "Leaders," 3 ft.	(1899) 31/6	12/6
(Part D. L.) Modderfontein (New) . . The grade of this property will probably improve as the Van Ryn Reef is opened up and closer sorting is effected.	1234	1,000,000 (nom.) 949,600 (issued) (£4 shares)	...	(1898) 42/6 (1899) 33/6	{ say from 6/- to 15/-
(and D. L.) Modderfontein Deep . . Arrangements have been made to sink boreholes to determine the depth of the reef.	327	100,000 (nom.) 90,000 (issued)	...	...	...

Modderfontein Extension -- <i>Holfontein</i> Section.					
Modderfontein Extension	705	325,000			
Reef located in boreholes.					
(D. L.) Geduld	2381	400,000 (nom.) 325,000 (issued)	Results of boreholes:— No. 1 (near northern beacon) 1391 feet, part core lost, part saved. 32 dwts. for 6 in. No. 2 . 101 dwts. for 10 in. No. 3 . 17 dwts. for 14 in. Average. 48 dwts. for 10 in. Dip 8°		
It is proposed to divide the Geduld property into six companies, each to be provided with a 100-stamp battery. The areas will range from 350 to 425 claims for each company. Assuming the milling width to be 2 feet, each mine will have a life ranging from 15 to 17½ years. The North and Central Geduld Mines have been formed.		325,000 (nom.) 175,000 (issued)			
Klipfontein Estate.					
Rand Klipfontein		65,000			
Transvaal Consolidated Lands (Holfontein)					
Prospecting operations have disclosed the existence of a reef (Van Ryn or Modderfontein). Boreholes have disclosed what are considered to be Van Ryn and Modderfontein series of Reefs.					

NOTE.—In several cases the areas of mining ground owned by the different companies have been taken from Messrs. Wood and Ortlepp's map of the Witwatersrand, the best and most recent of its kind. In addition to the claims many companies possess other important assets, *e.g.*, shares in other mines, notably the Simmer and Jack Proprietary. This fact must be borne in mind in making comparisons as to claim capitalisations. It has not been found practicable to show the areas worked out by the different companies. In certain cases some of the debentures have been paid off or converted into shares. D. L. signifies deep level; M. R., Main Reef; S. R., South Reef. One foot of reef at 25° dip gives 5887 tons per claim; at 30° dip, 6160 tons; at 35°, 6513 tons. A claim = 155 English feet along the strike of the reef at 41° dip gives 1587 tons per claim; at 30° dip, 6160 tons per claim; at 35°, 6513 tons. A

the district taken at 20,000 per claim. The average value per ton appears to be about 34s., and the average profit may be taken at 6s. 8d. That is during 1898 and 1899. The working of previous years does not offer a fair criterion, having been conducted under faulty management and methods.

From the west boundary of the Lancaster West to the east boundary of the French Rand the distance is 20,000 feet, or say 130 claims along the strike. The dip may be taken at 30 degrees. At this dip the depth of 4039 feet would be reached at 7000 feet from the outcrop, allowing say 17 dip claims available for practical mining to 4000 feet, which may, for the present, be considered the limit for this comparatively poor district.

130 × 17	.	.	.	.	= 2210 claims.
2210 × 20,000	.	.	.	.	= 44,200,000 tons.
44,200,000 at 34s.	.	.	.	.	= £75,140,000 gold value.
" at 6s. 8d.	.	.	.	.	= £14,733,333 profit "
Gold value per claim	.	.	.	.	= £34,000.
Profit " "	.	.	.	.	= £6,666.

ROODEPOORT SECTION.

The feature of the Roodepoort area is a thin but rich South reef.

Calculating from the data available, shown in the statement for the section, it appears that an estimate of 20,000 tons of payable ore per claim would be a conservative one. The gold value per ton may fairly be taken at 41s., approximately the average of the whole Rand for 1898, and the profit may equally be taken on the same basis, viz. at 13s. 4d.

From the western boundary of the West Roodepoort to the eastern boundary of the Kimberley Roodepoort the distance is about 16,000 English feet, or say 103 claims on the strike. The dip may be taken at 30 degrees, allowing 27 dip claims for mining to 6000 feet.

103 × 27	.	.	.	.	= 2781 claims.
2781 × 20,000	.	.	.	.	= 55,620,000 tons.
55,620,000 at 41s.	.	.	.	.	= £114,021,000 gold value.
" at 13s. 4d.	.	.	.	.	= £37,080,000 profit "
Gold value per claim	.	.	.	.	= £41,000.
Profit " "	.	.	.	.	= £13,333.

VOGELSTRUIS—MAIN REEF SECTION.

This section is one of the poorest on the Rand, but the reefs become wider from west to east, and with improved methods of working and better conditions politically, working costs may be reduced. One of the shrewdest financial houses on the Rand has

sufficient confidence in it to spend large sums in exploiting its deep levels.

Taking all the features shown in the statement of data into consideration, and assuming that on most of the area both the South Reef and the Main Reef Leader will be worked; and taking the milling width of both reefs at only 2 feet, or 4 feet in all, and the average dip at 30 degrees, which would give 6160 tons per foot per claim, a total tonnage of 24,640 is arrived at for each claim. Deducting 4640 tons per claim to allow for contingencies, unpayable portions, dykes, and for sorting, a nett tonnage of 20,000 may be taken. For this tonnage a similar estimate of value to that of the Lancaster—French Rand Section would be reasonable, viz. a gold value per ton of 34s., and a profit per ton of 6s. 8d.

From the western boundary of the Vogelstruis to the eastern boundary of the Consolidated Main Reef the distance is 27,000 English feet, equivalent to 175 claims on the strike. With a dip of 30 degrees 17 claims will be available for mining to a vertical depth of 4000 feet.

175 × 17	= 2975 claims.
2975 × 20,000	= 59,500,000 tons.
59,500,000 at 34s.	= £101,150,000 gold value.
„ at 6s. 8d.	= £19,833,333 profit „
Gold value per claim	= £34,000.
Profit per claim	= £6,666.

LANGLAAGTE STAR—PAARL CENTRAL SECTION.

This is one of the least satisfactory sections of the Rand. Very few of the mines have ever shown a profit. The reefs are fairly thick, however, and the tonnage per claim is high, and under new conditions the ore, although of a low grade, may be worked at a small profit.

Under future new conditions and with better management, the experience of other mines on the Rand, which for years were unpayable and afterwards were brought into the profit-earning stage, may be confidently expected here as well. A value of 27s. 6d. per ton, and a profit of 3s. 4d., may be estimated for the section. This is a very low estimate, and will probably be exceeded in actual working. The ore contents per claim are high. Taking an average of 6 feet milling width and an average dip of 30 degrees, the ore contents per claim will be 36,960 tons, deducting the 6960 for contingencies, waste rock, unpayable portions, &c., the estimate of 30,000 tons arrived at may be fully expected to be realised.

From the western boundary of the Langlaagte Star to the eastern boundary of the Paarl Central the distance is 13,500 English feet equivalent to 87 claims on the strike. With a dip of 30 degrees 13½ dip claims will be available for mining to a vertical depth of

3000 feet, which may be considered the limit of profitable mining at present for this poor section.

$87 \times 13\frac{1}{2}$	.	.	.	.	.	= 1174 claims.
$1174 \times 30,000$	.	.	.	.	.	= 35,220,000 tons.
35,220,000 at 27s. 6d.	.	.	.	.	.	= £48,427,500 gold value.
" at 3s. 4d.	.	.	.	.	.	= £5,870,000 profit "
Gold value per claim	.	.	.	.	.	= £41,250.
Profit " "	.	.	.	.	.	= £5000.

It must be noted that on this section where the reefs, so far as proved, are of very low grade, it may not be found profitable to mine to an equal depth as on richer properties. It is, of course, possible that, on testing the deep levels by boreholes, the reefs may be of a higher grade than they are at the outcrop. And a readjustment of taxation is possible, which would reduce the working costs so as to double or treble the profits.

LANGLAAGTE ESTATE—CROWN REEF SECTION.

This section may be termed the western end of the richest portion of the Rand. The reefs worked are thick and payable.

The average value for the district appears to be about 39s. per ton, and the profit 14s. 8d. The known average for the Rand is as stated previously, value 41s. and profit 13s. 4d. The higher profits shown here for ore of less than the average value is to be accounted for by the great thickness of the ore bodies, which permits of economical working. For purposes of calculation, the average values of the Rand, viz. 41s. and 13s. 4d., respectively, may be taken for the district. The reef thickness worked varies from 6 to 16 feet, and the nett ore contents, as shown by claims exhausted in past working, vary from 40,000 to 90,000 tons. An estimate of 45,000 tons per claim will be a safe one.

From the western boundary of the Langlaagte Estate to the eastern boundary of the Crown Reef the distance is 7000 feet, or say 45 claims on the strike. Again, taking the average dip at 30 degrees, 27 claims are available for mining to a depth of 6000 feet.

45×27	.	.	.	.	.	= 1215 claims.
$1215 \times 45,000$	.	.	.	.	.	= 54,675,000 tons.
54,675,000 at 41s.	.	.	.	.	.	= £112,083,750 gold value.
" at 13s. 4d.	.	.	.	.	.	= £36,450,000 profit "
Gold value per claim	.	.	.	.	.	= £92,250.
Profit " "	.	.	.	.	.	= £30,000.

BONANZA—CITY AND SUBURBAN SECTION.

The richest section on the Rand, and possibly the richest in the world.

From the data the average value for the section may be calcu-

lated at 65s. per ton of ore milled, and the average profit at 37s. 6d., or, to allow for the reef being thinner in the deep levels, say 60s. and 32s. 6d. respectively. The ore contents may be taken at 37,500 tons.

Although the dip is steep at the outcrop in most of the mines, the reef speedily flattens in depth, and an average of 30 degrees may be taken for the section.

From the western boundary of the Bonanza to the eastern boundary of the City and Suburban the distance is 14,000 English feet, equal to 90 claims on the strike of the reef. With an average dip of 30 degrees 30 dip claims will be available for mining to a depth of 6924 feet, a depth which may be expected to be both possible and profitable in this rich area. On this basis the distance of the 30th dip claim from the outcrop will be 12,000 feet. It may be remarked that the boreholes put down on the Turf Club's property are about 8250 feet from the outcrop (see p. 13 for results).

90 × 30	= 2700 claims.
2700 × 37,500	= 101,250,000 tons.
101,250,000 at 60s.	= £303,750,000 gold value.
" at 32s. 6d.	= £164,531,250 profit "
Gold value per claim	= £112,500.
Profit " " 	= £60,937.

MEYER AND CHARLTON—WITWATERSRAND SECTION.

This extensive stretch is taken as one on account of the uniform payability of its mines. The section has great thicknesses of reef throughout and is of a high average value, as can be seen from the data.

A conservative estimate for the whole section is a value of 41s., and a profit of 14s. per ton, and the tonnage for the district may be taken at 40,000 per claim.

From the western boundary of the Meyer and Charlton to the eastern boundary of the Witwatersrand the distance is 45,000 English feet, equal to 290 claims along the strike of the reef. The average dip, as shown by the Bezuidenville borehole, was 29 degrees, and by the Rand Victoria borehole $27\frac{1}{2}$ degrees. The dip at the outcrop is steep as a rule, and 30 degrees may be taken as the average, but in the farther deeps it will in all likelihood prove much less, perhaps even as low as 25 degrees, in which case 30 dip claims could be exploited without exceeding a depth of 6000 feet.

290 × 30	= 8700 claims.
8700 × 40,000	= 348,000,000 tons.
348,000,000 at 41s.	= £713,400,000 gold value.
" at 14s.	= £243,600,000 profit "
Gold value per claim	= £82,000.
Profit " " 	= £28,000.

BALMORAL—BLUE SKY.

From the Balmoral to the Blue Sky the East Rand series appears to have been duplicated by a longitudinal dyke or fault which has thrown up the strata on the south side of the fracture. For this reason, although the values per ton are quite equal to those of the area just considered, and although the tonnage per claim has also proved equal so far as the outcrop mines are concerned, the area is taken separately on account of the probability that the northern series now being worked may be cut off in the deeper levels, and the tonnage per claim must be reduced accordingly.

Taking the tonnage for the outcrop mines at 40,000 per claim, and taking half this quantity for each set of reefs, and reckoning that the northern series may only extend down one-fourth of the way to which deep-level mining will be carried, a total average tonnage of 25,000 per claim may be arrived at. The value per ton may be taken at 41s., and the profit value 14s. From the west boundary of the Balmoral to the eastern boundary of the New Blue Sky the distance is 22,000 English feet, or about 142 claims along the strike.

Assuming that the dip is rather steeper than usual in the deep levels, and taking it at 30 degrees, and assuming that the limit of practical mining depth for the area will be in the region of 6000 feet, which would allow 22 dip claims to be worked, the total available claims may be calculated at—

142 × 22	= 3124 claims.
3124 × 25,000 tons	= 78,100,000 tons.
78,100,000 at 41s.	= £160,105,000 gold value.
„ at 14s.	= £54,670,000 profit „
Gold value per claim	= £51,250.
Profit „ „	= £17,500.

BOKSBURG—APEX MINES.

The section of the Rand now to be commented upon is one which, until a few years ago, was considered of little value. The answer to the question, “What can be expected beyond the Blue Sky?” was one which showed great divergence of opinion among mining experts.

During the last few years, however, the prospectors got on the right track, and the boreholes put down to the south-east of Boksburg have located the East Rand series sufficiently to establish the value of the district on a fairly sound basis. The East Rand series has been proved to trend in a south-easterly direction, under the patch of Karoo formation containing the coal measures east of Boksburg, to a point on the south of the farm Rietfontein. Here direction changes, and the reefs bend round again to the north, trending still under the coal measures towards the outcrops of the

reefs which show themselves on the farm Benoni, and on through the Van Ryn and Modderfontein properties. The values of the ore bodies disclosed by the boreholes vary considerably. On the south-western dip of this V-shaped divergence to the south an assay value of 25 dwts. over 40 inches of reef was shown in the No. 1 borehole on the East Rand Extension property, while the No. 2 borehole on the same property showed a value of 33 dwts. over 25½ inches. On the eastern dip it is stated that a borehole on the property of the Apex Mines, put down in 1899, struck a reef assaying 3 oz. to the ton. Further north, on the same property, other reefs have been disclosed by prospecting operations during the last five years, but these have shown only low grade values. Taking into consideration the results of recent prospecting, which after all is the only fair criterion, most of the previous work having been expended in the wrong direction, it seems fairly certain that the district will prove to have a value rather above the average. A milling width of 3 feet of reef, carrying a gold value of 45s. per ton and a profit value of 15s. per ton, is not an extravagant estimate. The reef dips at a low angle, probably not more than



EAST RAND EXTENSION G. M. Co. Section of Borchole No. 1, in which the South Reef was struck at 1353 feet, assaying 25 dwts. over 40 in.



15 degrees on the average, but to be on the safe side the average dip may be taken at 20 degrees.

The distance measured along both sides of the V-shaped outline is about 31,000 feet, equal to 200 claims on the strike. It must be remembered that owing to the shape of the outline the area of dip ground is an ever-widening one, and calculation based only on the dip claims at right angles to both sides of the outline will leave a large wedge-shaped area south of the apex not taken in. This area may be left out of the calculation, and will go to make up for possible unpayable portions, dykes, &c. At an angle of 20 degrees a mining depth of 6000 feet would be reached at about 17,000 from the outcrop. This is equal to about 40 claims on the dip.

200 × 40	.	.	.	.	= 8000 claims.
8000 × 17,000	.	.	.	.	= 136,000,000 tons.
136,000,000 at 45s.	.	.	.	.	= £306,000,000 gold value.
" at 15s.	.	.	.	.	= £102,000,000 profit "
Gold value per claim	.	.	.	.	= £38,250.
Profit "	"	"	.	.	= £12,750.

BENONI—MODDERFONTEIN.

On this section the outcrops of the reefs again emerge from under the Karoo formation, and consequently it has been worked for many years. Until quite recently thorough consistent success has not marked the history of the mines, but, like everywhere else on the Rand, scientific careful management has stepped in and altered the whole position.

Judging from the data supplied by the Van Ryn and Modderfontein mines the milling width for the section may be taken at 6 feet.

The dip appears to be about 30 degrees over the area, but from other data work on the further dips will probably prove an average of not more than 25 degrees. On this basis a milling width of 6 feet would give a tonnage per claim of 35,320 tons. Discarding the 5320 for contingencies for unpayable ground, dykes, &c., a net milling tonnage of 30,000 tons per claim is not an excessive estimate. The average results from the outcrop mines appear to be about 36s. gold value per ton, and 12s. profit. But to take a conservative estimate the figures may be taken at 35s. and 10s. respectively.

From the south-western boundary of the Benoni Gold Mine to the eastern boundary of the Modderfontein the distance is 26,000 feet along the strike, equal to 167 claims. At a dip of 25 degrees a mining depth of 6000 feet would be reached at 13,000 feet from the outcrop, equal to 31 claims on the dip.

167 × 31	.	.	.	.	= 5177 claims.
5177 × 30,000	.	.	.	.	= 155,310,000 tons.
155,310,000 at 35s.	.	.	.	.	= £271,792,500 gold value.
" at 10s.	.	.	.	.	= £77,655,000 profit "
Gold value per claim	.	.	.	.	= £52,500.
Profit "	"	"	.	.	= £15,000.

MODDERFONTEIN EXTENSION—HOLFONTEIN SECTION.

This section has only been systematically taken in hand of recent years, and the data available consist mainly of the results of prospecting boreholes. On the Modderfontein Extension the results so far have not been highly encouraging, but on the dip ground of the same area the recent prospecting operations on the farm Geduld have shown highly satisfactory results. The borehole on that property nearest the outcrop struck a banket reef at 1391 feet, showing a value of 32 dwts. over 6 inches. The No. 2 borehole, much further south, struck the reef at 1724 feet, 10 inches thick, assaying 101 dwts.; the No. 3 borehole, put down further to the east, struck the reef at 2136 feet, showed 17 dwts. for 14 inches of reef. These results, although disclosing only thin ore bodies, show a high average. The average value is estimated at 48 dwts. over 10 inches. The average dip disclosed is under 10 degrees. On the Rand Klipfontein a shaft struck a reef 18 inches thick, with high assay values. On the farm Holfontein several boreholes have been put down, all of which have disclosed the Modderfontein or the Van Ryn series of reefs, but the values have not, so far, been published.

To assume from these data an average milling width of 2 feet over this area, and an average gold value of 45s. per ton carrying a profit of 15s., appears to be a moderate estimate, which has every chance of being exceeded in actual results. It must be remembered that two series of reefs probably exist over the area, and at some places it is almost certain that both series will prove payable, in which case the estimated 2 feet of ore may easily be doubled. These figures may, therefore, be considered as of a very conservative character. The dip disclosed by the deeper boreholes is from 8 to 10 degrees. But, again, to be on the safe side, the calculations may be based on an average of 15 degrees. At this dip 2 feet of ore will yield 11,048 tons per claim, or say 10,000 tons.

From the point where the reefs strike the western boundary of the Modderfontein extension to the eastern boundary of Holfontein is approximately 40,000 feet, equal to 257 claims along the strike. At a dip of 15 degrees a mining depth of 6000 feet would be reached at 23,000 feet from the outcrop, equal to 55 claims on the dip.

257 × 55	= 14,135 claims.
14,135 × 10,000	= 141,350,000 tons.
141,350,000 at 45s.	= £318,037,500 gold value.
„ at 15s.	= £106,012,500 profit „
Gold value per claim	= £22,500.
Profit „ „	= £7500.

It being probable that the dip in this area will not average more than 10 degrees, the full number of claims to 6000 feet is taken, although the profit value per claim is low.

APPENDIX C

THE NIGEL DISTRICT

THE principal mine in the Nigel district, which is situated some fifteen miles south of the Springs terminus of the Rand railway, and between that village and the town of Heidelberg, is the Nigel Gold Mine. This Company is one of the largest on the fields, having an area of 529 claims, of which, after ten years' work, nearly thirty claims have been exhausted. The reef worked is thin, but of high grade; it varies in thickness from a fraction of an inch to 18 inches, with a rough average of say 6 inches. In past years the working of the mine has not given it a proper chance, and the number of shafts from which the ore was brought to bank has greatly increased working costs. Moreover, the machinery was out of date. About the year 1897 the firm of Wernher, Beit & Co. acquired an interest in the Company, and development, new equipment, and thorough overhauling was taken in hand. The capital of the Company is now £250,000, with £60,000 debentures. Dividends amounting to over £300,000 have been paid. The milling power is 50 stamps. Owing to the thinness of the reef working costs are high.

The Nigel Deep mine commenced crushing in February 1899, but the results obtained cannot fairly be deemed properly characteristic.

There are a number of other mines in the district floated in the boom times of 1895, and all that can be said of them is that their chances of success under past conditions were dubious. Were working costs reduced considerably some of them could be worked at a small profit.

APPENDIX D

THE PROGRESSIVE DEVELOPMENT OF THE RAND¹

BY A. COOPER-KEY.

(*In the "South African Mining Journal."*)

TABULATED below will be found, under the headings Central Section, Eastern Section, Far Eastern Section, and Western Section, estimates of the increases likely to occur in the stamping power employed by Rand mines during the next three years. To-day there are upwards of 6000 stamps in operation. At the end of next year it is estimated there will be nearly 8000, at the end of 1901 nearly 10,000, and at the end of the second year of the twentieth century practically 12,000. It will be seen that the probable increment is nigh upon 2000 stamps in each of the next three years, the detailed figures showing 1730 extra heads in 1900, and 1950 and 1940 in 1901 and 1902 respectively.

This estimated increase is far in advance of that recorded during 1899, which was about 900 heads. The year 1898 may then rightly be called the deep-level year, for a number of the large deep-level subsidiaries of the Rand Mines group commenced their milling operations; and a comparison between the last months of 1898 and 1897 shows for the former the very remarkable expansion represented by 1100 stamps more. Now, in 1899 we are seeing nothing like such a rush of new producers; and what is more to the point, such mines as have swollen the Chamber of Mines' output sheet have not been crushing with particularly large batteries.

Each year is found to have its distinguishing features; 1899

¹ This article formed the conclusion of a series which appeared in the *South African Mining Journal* in August 1899. It was written simply in regard to industrial progress. Generally the table should hold good if three years are added to the later dates given. It is considered probable that towards the end of 1902 the mines will be brought to the productive activity of the middle of 1899—the starting-point of the calculation.

is chiefly remarkable (in connection with the subject with which we are now intimately concerned) for (a) the entry into the milling stage of first deeps whose development was taken in hand somewhat late, or which had been hindered by mining or legal conditions, *e.g.*, Langlaagte Deep and Ferreira Deep; (b) the commencement of milling by companies in districts far from the Central Section, *e.g.*, Roodepoort Central Deep and Nigel Deep, and (c) the resuscitation of such ventures as the Aurora West United, the New Unified, the Lancaster West, and the Chimes Exploration. There has also been a noticeable tendency to increase equipments at some of the older mines.

While, therefore, we had 1898 as the great deep-level year for the first dip properties, to use a metallurgical metaphor, we only have the "tailings" of such first deeps this year. On the contrary, 1900 will be mainly distinguished as marking the crushing era of the second deeps—mines like the Simmer East, Knights Deep, Knights Central, and Witwatersrand Deep. The following year will also see great activity in this direction, as it is practically certain that the Robinson Central Deep, the Jupiter, the Simmer, and Jack West, the South Geldenhuis Deep, and the South Rose Deep will then be employing mills of 100 stamps each. In 1901 there will not only be considerable increase in the stamping power of the first row of deeps, but the early producers of the second row will come to the front; and there will be fresh additions from the outcrop mines—chief among which will be the Randfontein subsidiaries.

Taking the sections separately, it may be observed that the Central (extending from Langlaagte to Germiston) is likely to furnish the largest increase. And these increases will be shown right along the line, the section east of Geldenhuis giving, area for area, the most substantial additions; though the Johannesburg district, with the Village Deep, Robinson Deep, Robinson Central Deep, Village Main Reef and Robinson, will run it close. The Eastern and Western Sections show nearly similar figures, the respective estimates being 1560 and 1620 heads during the next three years. In the Far Eastern Section there are but five representatives; their aggregate additions are, however, put at 565 heads—for a large proportion of which Geduld is responsible.

Viewing the characteristics of the different sections in another manner, it is seen that the largest increase expected is during 1901 in the Central Section. Next comes the Eastern Section in 1902, which, with the Angelo, Driefontein, and Comet Dip areas, the Cason Block and the Angelo Deep producing, is calculated to give additional 760 heads. Both in 1901 and 1902 the Western Section will contribute largely, chiefly by reason of the large batteries contemplated at Randfontein.

The additional stamping power in prospect will be about as much in the Central as in the Eastern and Far Eastern combined—2030

stamps in the three years—while the Western area figures at 1620 heads.

It must be remembered that the following figures are approximate, and in the nature of things the time limits cannot be strictly defined :—

PROBABLE INCREASES IN THE MILLING POWER.

Company.	Increase in Stamps Running in Four Consecutive Years.				
	1899.	1900.	1901.	1902.	Total.
CENTRAL SECTION—					
Village Deep	...	...	...	100	100
Robinson Deep	20	80	...	...	100
Robinson Central Deep	...	...	100	...	100
Village Main Reef	60	...	40	...	100
Robinson	...	60	...	...	60
Langlaagte Royal	...	60	60	...	120
Langlaagte Deep	...	100	...	...	100
Ferreira Deep	50	...	60	...	110
Wolhuter	...	50	50	...	100
New Goch	...	...	60	40	100
Nourse Deep	...	20	50	50	120
Henry Nourse	...	20	...	...	20
Jumpers Deep	...	...	50	50	100
Jupiter	...	...	100	50	150
Simmer and Jack West	...	...	100	50	150
Geldenhuis Deep	...	...	40	...	40
Simmer and Jack Proprietary	...	40	30	...	70
South Geldenhuis Deep	...	...	100	50	150
South Rose Deep	...	...	100	50	150
Rose Deep	...	40	60	...	100
	130	470	1000	440	2040
EASTERN SECTION—					
Witwatersrand Deep	...	60	40	...	100
Glen Deep	...	60	...	40	100
Witwatersrand (Knights)	...	80	40	...	120
Glencairn	...	40	...	...	40
Simmer East	...	100	50	50	200
Knights Deep	...	100	50	50	200
Knight Central	...	100	...	100	200
Angelo	...	40	...	...	40
Driefontein	...	40	...	...	40
East Rand Proprietary—Angelo, Driefon- tein, and Comet Deeps	...	...	...	300	300
Cason Block	...	...	...	100	100
Angelo Deep	...	...	...	120	120
	...	620	180	760	1560
FAR EASTERN SECTION—					
Benoni	...	60	40	...	100
Kleinfontein Central	...	50	...	...	50
Van Ryn	35	40	...	...	75
New Modderfontein	...	90	50	...	140
Geduld	...	...	...	200	200
	35	240	90	200	565

PROBABLE INCREASES IN THE MILLING POWER—*continued.*

Company.	Increase in Stamps Running in Four Consecutive Years.				
	1899.	1900.	1901.	1902.	Total.
WESTERN SECTION—	...	...	...	...	...
Consolidated Main Reef	...	40-40	40	...	120
Main Reef Deep	...	...	...	80	80
Main Reef East	...	...	...	80	80
Aurora West United	...	20	20	...	40
Vogelstruis Deep	...	...	60	40	100
Roodepoort	...	40	20	...	60
Roodepoort United	...	60	...	...	60
Roodepoort Central Deep	...	50	...	...	50
Durban Roodepoort Deep	...	40	...	...	40
French Rand	...	60	80	...	140
Eton	...	...	60	40	100
Lancaster West	...	...	50	...	50
West Rand Mines	...	...	60	60	120
Violet	...	50	50	...	100
Randfontein subsidiaries	...	...	240	240	480
	...	400	680	540	1620
GENERAL SUMMARY—	...	...	...	...	...
Central Section	130	470	1000	440	2040
Eastern Section	...	620	180	760	1560
Far East Section	35	240	90	200	565
Western Section	...	400	680	540	1620
	165	1730	1950	1940	5785

Taking a basis of 6000 stamps, representing with sufficient approximation the number at work on the Rand, according to the last published analysis of the Chamber of Mines, the following works out as the probable stamping powers at the *end* of the years specified :—

1899	6,165 stamps.
1900	7,895 „
1901	9,845 „
1902	11,785 „

It will be reasonable to assume the average duty at rather over 5 tons per stamp per day, each head crushing 150 tons monthly, or 1800 tons a year. Indeed, with the recent marked tendency to break the rock finer before feeding it into the mortar-boxes, and the increase of duty in consequence of improved discharge, even a higher figure would be justified. On the basis of 1800 tons per stamp per annum, and taking an average number of stamps instead of the *maxima* quoted above, the following tonnages will be crushed :—

In 1900 (7,000 stamps)	12,600,000 tons.
In 1901 (9,000 stamps)	16,200,000 „
In 1902 (10,500 stamps)	18,900,000 „

It has not been thought advisable to assume an increasing mill duty, as the heavier weight of the stamps employed will be balanced more or less by the growing proportion of harder rock milled.

For estimating the value of the output, one may rely upon an average of £2 per ton crushed—the average for years past. It is true that the employment of additional milling power at certain properties will tend to a diminution of grade, but, on the other hand, the lists include some mines of above average grade. Then there must be reckoned the more general adoption of slimes plants and the raising of the present high standard of recovery, as well as improvement in sorting appliances at many mines. As costs are reduced, lower-grade mines will prove remunerative, and the value of the recovery will gradually recede; but this is not an immediate contingency. In support of this value it may be mentioned that Dr. Hatch assumes it in a recent article in the *Engineering Magazine*. On the tonnages given the values of output would be:—

In 1900	£25,200,000
In 1901	32,400,000
In 1902	37,800,000

It will, however, be recognised that these figures are merely approximate, for the data are not such as to enable very close forecasts to be made, consequently they are put forward with reserve.

It was shown in the introductory article of this series that the ratios of increase in the value of gold production was 34.6 per cent. in 1897 compared with 1896, and 43.07 per cent. in 1898 over 1897. The estimates for 1899, 1900, 1901, and 1902 give the following ratios: 33 per cent., 26 per cent., 27.8 per cent., and 16.6 per cent.

Probably the greatest difficulties in the exploitation of the mines in the near future will be (1) the short supply of native labour and (2) the question of water. To a great extent the former is being circumvented by a liberal use of machine-drills. In this connection, too, neither electric drills nor the use of compressed ("liquid") air as an explosive should be overlooked as possible sources of economy. But in respect of water, the difficulties are bound to be great, and they will certainly be increasing. In fact, it is in connection with this factor that the great mining industry of the Witwatersrand will find its severest problems. Engineering difficulties will be overcome by the gradual accumulation of experience.

APPENDIX E

DESCRIPTION OF THE DIAGRAMMATIC SECTIONS

(*Opposite p. 10*)

BY DAVID DRAPER, F.G.S.

THE diagrammatic sections represent the position and inclination of the various beds of which the Witwatersrand is composed.

Section No. 1.—From Kromdraai through the town of Krugersdorp to the northern boundary of Rietvlei.

This section intersects the Bothas Reef west of the Krugersdorp railway station, and the Battery Reef west of the Lancaster West main shaft, terminating at the Black Reef quartzites on the southern bank of the Rietvlei Spruit. On the extreme northern limit dolomitic limestone, dipping north at an angle of about 20 degrees, is shown. This series lies conformably upon Black Reef quartzite, in which a layer of gold-bearing quartz has been worked for some years past. This is an interbedded layer quite distinct from any of the conglomerate series.

Beneath the quartzite the conglomerates of the Black Reef are shown. This reef is badly developed here, and is not worked for gold.

It lies directly upon schist of a peculiar variety, which hitherto has only been discovered at this spot, and to which the name "Kromdraai schist" has been given. The peculiarities of this schist are a large number of sub-angular and rounded blocks of quartzite, closely resembling the quartzites of the Witwatersrand, included within its mass, and that the schistosity of the main body is in conformity with the longer axes of these blocks or boulders. The rock weathers red in colour, while the included blocks are light in colour. The relation of this series to the crystalline schist in its vicinity is as yet undetermined. In the diagram it is shown overlying them, but this is merely tentative, awaiting further investigation.

The crystalline schists are of the ordinary variety so plentiful throughout the country. They consist largely of amphibolite, much weathered into a talcose rock on the surface.

Granite is represented under the schists. It outcrops about a quarter of a mile to the eastward of the line of section.

Quartzites of the Witwatersrand appear on the northern slope of range. This is the base of what is known as the "Hospital Hill series," which consists of quartzites, false bedded and generally disturbed, dipping southward at an angle of about 30 degrees, on which a great thickness of highly ferruginous slate beds rests conformably. There are layers of slate alternating with layers of quartzite, especially in the lower portions of the bed, but in the upper part the bulk of the rock is slate, included in which there is one layer of dark-coloured slate, generally greatly contorted and crumpled, and containing a thin layer of red jasper.

This layer is shown in the Hospital Hill series. Wherever the Hospital Hill series has been discovered this distinguishing layer is conspicuous, and it is used as a means of identification—a leading bed.

Quartzite stained green, especially between the layers, is the next bed in upward order. Here again the distinguishing feature—the green tint—is constant throughout the country, and is consequently a reliable guide.

Quartzites continue for some distance farther on, where the first bed of conglomerate appears. It is an ordinary conglomerate, about 2 feet in thickness, and containing a small quantity of gold.

Conglomerate beds, generally lying directly upon red slaty layers, continue interstratified with quartzites to the creek which flows from the village of Krugersdorp, where an alteration of the dip of the strata, accompanied by a great disturbance of the quartzites, indicates the position of a fault.

It is probable that the beds to the southward have been thrust over the northern portion of the series, giving a reverse fault. The conglomerate bed shown lying on the red slate immediately south of the fault is similar to the bed shown to the northward, of which it probably is the continuation.

Quartzites continue until the ground becomes covered with wind-blown sand, under which probably quartzite and slates again occur, but of which there is no surface indication until near the outcrop of the Bothas Reef series where quartzite is found, and continues through the farm Luipaardsvlei almost to the northern boundary of the farm Rietvlei. In this series the Bothas, Monarch, Africander, and Battery Reef are included, for full particulars of which the reader is referred to Truscott's "Witwatersrand Goldfields" (Macmillan and Co.). The quartzite series terminates against the lower portion of the great sheet of amygdaloidal diabase which runs conformably with the conglomerate series, and is shown in the section.

The Black Reef series, consisting of a layer of conglomerate underlying a thick bed of quartzite, which in its turn is covered conformably by dolomitic limestone, lies unconformably upon the tilted edges of the quartzites of the Witwatersrand.

The oft-debated question as to the identification of the Bothas Reef with the Main Reef has not yet been definitely answered.

There is still much to learn about the gold-bearing beds of this part of the country before this interesting subject will be exhausted.

Section No. 2.—From Orange Grove to the Black Reef on Roodekop.

This section, commencing on the farm Zandfontein a little to the eastward of the Orange Grove Hotel, passes through the Doornfontein valley, between the pumping-station and the wire fence which separates Bezuidenhoud's reserve from the suburbs of Johannesburg, over the hill beyond the residence of Mr. Henry Lorentz, through the western end of Belgravia, intersects the western portion of the Henry Nourse, and after crossing the valley at the upper end of the Rosherville dam and the Elsburg series on the old Natal main road, terminates at the Orion Company's ground on Roodekop.

This section begins with granite, which comes to daylight below the north base of the Witwatersrand. Crystalline schists lie between the granite and the quartzites forming the lowest beds of the Hospital Hill series, which here is identical in every detail to those in the section previously described. All the beds in the former are repeated in the latter.

Up to Bezuidenhoud's valley the strata is a duplication of that on Honing Klip north of Krugersdorp, but here an alteration occurs. Amygdaloidal diabase similar to that on Rietvlei, which is so prominent a feature in the geology of the country south of the conglomerate series, is found occupying a considerable extent of country to the eastward of the line of section, and running westward, until it is lost under surface sand, nearer the town of Johannesburg. This diabase is schistose in structure, and shows evidence of great movement in its mass after cooling. It underlies a thick bed of quartzite, containing in its upper portion a great number of conglomerate beds, which in general character are identical with the upper beds of the conglomerate series, known as the Elsburg group of reefs. In many particulars these beds are distinguishable from the older conglomerates of the Main Reef and other series. They contain fragments of *Hospital Hill slate* and *green quartzite*, which are only found in the Hospital Hill series. They also contain many partly angular fragments of quartzite, some over 20 lbs. in weight. These have been subjected to slight attrition, in comparison to the rounded and egg-shaped pebbles of the older series.

Several of the early geologists noticed the similarity between the conglomerates occupying this position behind the Main Reef series and the Elsburg series, which lies a couple of miles south. Amongst these, Mr. A. R. Sawyer and Dr. F. H. Hatch were the best known.

The conglomerates, in the position shown in section, dip to the southward at an angle varying from 70 degrees to about 35. They are greatly faulted and much disturbed. They lie directly upon the

Hospital Hill series, which is vertical, and contain a repetition of the peculiarly-marked contorted slate, and of the green quartzite.

The Main Reef lies to the southward, and it is followed in turn by the Livingstone, Bird, Kimberley, and finally the Elsburg groups, which are all shown in the sections.

It will be noticed that there is a gradual flattening of the strata to the southward. The Main Reef and the strata, both beneath and above it, are almost vertical; there is a distinctly flattening dip in the next group, and this continues until the dip of the Elsburg has been lessened to 30 degrees.

Amygdaloidal diabase lies conformably upon the Elsburg beds.

Further to the south the Black Reef, with its accompanying quartzites and dolomitic limestone, lying comparatively flat, and consequently unconformable to the older series.

Section 3.—From Zuurfontein to Klippoortje.

This section starts from the granite on Zuurfontein, intersecting the New Rietfontein and Knight's mines, and, after passing through the Elsburg series at the railway cutting, terminates on the Black Reef on Klippoortje.

It differs in several important respects from Section No. 2, though the distance between the sections is not more than six miles.

Granite followed by schist outcrops on Zuurfontein, but amygdaloidal diabase appears instead of the Hospital Hill series, and continues to the foot of the hill on which the Rietfontein mine is situated.

A portion of the conglomerate beds which lie interstratified in the quartzites has faulted over, and now lies inclined to the northward, whereas the dip of the strata in the main body is vertical, inclining to the southward farther away towards the Main Reef.

In this instance again there is ample evidence that the beds, which include the New Rietfontein Reef, are portions of the more southern Elsburg series, which have been placed in its present position by faulting.

Fragments of Hospital Hill slate and green quartzite are here abundant in several layers, especially in one which is almost entirely composed of these fragments in a partly-rolled condition; this is marked "Breccia" in the section.

The Hospital Hill series, again maintaining its characteristics, crops out for a great distance to the southward. It is vertical in dip, and on account of its great thickness is shown as having been duplicated by faulting. This is advanced tentatively, pending further investigation. Owing to surface covering, the geology of this portion of the section is somewhat obscure.

The Main Reef on Knights is shown in duplicate. This is in accordance with known facts. To the southward the Livingstone, Bird, Kimberley, and Elsburg are shown at gradually flattening

angles, as they were observed on the surface. Finally the Black Reef, with its accompanying beds, completes the section.

The causes which have brought about the great displacement of the strata mentioned in the preceding pages are not easily to be explained.

Taking No. 2 section as showing the most complete succession of the strata, the difficulty lies in the duplication of the older beds—the Hospital Hill series—taken in conjunction with the displacement of beds whose main body lies at present at least two miles to the southward of the Main Reef, and again the fact that the amygdaloidal diabase, which overlies the Elsburg series in its normal position, is found underlying the conglomerates in the hill near Lorentz House. This means not only faulting, but faulting accompanied by a great overthrust of the upper portion of the conglomerate beds—in reality the Elsburg series—and by their complete inversion.

But there is another difficulty to explain away, and that is how to account for the inclined position of that portion of the Hospital Hill series which has maintained its proper place on the northern flank of Bezuidenhoud's valley, and the vertical position of its duplicated portion, which lies immediately to the south of the faulted Elsburg series on Lorentz Hill.

For the purpose of identification in the sections these portions are marked A and A₁ for the two outcrops of the Hospital Hill series, and B for the faulted Elsburg, B₁ indicating the amygdaloidal diabase.

"A" beds dip at an angle of 35 degrees south.

"A₁" beds are vertical.

"B" beds dip at irregular angles to the south.

"B₁" shows marked schistosity in the same direction.

The "A₁" beds are distinctly Elsburg.

The "B₁" beds are amygdaloidal diabase, altered by movements into a variety showing marked schistosity.

These are the *facts* from which the following theory may be deduced:—

The great earth movements, which culminated in placing the Witwatersrand beds in their present position, were preceded by the intrusion of the great boss of granitic rock which lies between Johannesburg and Pretoria.

The movement of the sedimentary beds was distinctly upward, and consequently the upper beds, being unable to slide away to the south owing to their southern terminations butting up against the fractured ends of the southern portion of the strata, which was probably being subjected to exactly similar movements, were compelled to slide upward along the planes of least resistance.

So the Elsburg series passed over all the underlying beds until its northern end reached the base of the Hospital Hill series, which had been thrust into an upright position, and then fell into the chasm

formed by the sinking of that part of the Hospital Hill series which lies to the northward of the Bezuidenhoud valley.

During this fall the Elsburg series became inverted, and now lies upon the amygdaloidal diabase, which accompanied it in the journey instead of being in its position under it.

If it is admitted that this description explains the occurrence of a portion of the Elsburg series at Lorentz Hill, it must be granted that the same reasoning will explain the position of the reefs on Rietfontein.

The problem is, however, a very difficult one, and this attempt to explain the position of these faulted beds is put forward with all diffidence, and with a full appreciation of the limited amount of our present knowledge on the subject of faulting in connection with the strata which compose the Witwatersrand beds.

APPENDIX F

SUGGESTIONS FOR THE REMOVAL OF CERTAIN MONOPOLIES IN SWAZILAND,

AND FOR THE SETTLEMENT OF THE COUNTRY IN A
PERMANENT MANNER AND FOR THE OCCUPA-
TION OF THE LAND.

By W. P. FRASER, ESQ.

Argument.—The lawless condition of Swaziland, the state of chaos which prevails in its administration, the lamentable condition of the natives, all show that the present state of affairs can no longer be tolerated. The hopes at one time entertained that transfer of the country step by step from British to Boer domination would ensure better rule and a humane treatment to the native have proved illusory.

There is practically no income, and if the affairs of Swaziland are treated in a patchwork manner with the idea of meeting the problems tentatively, leaving the rest to time, then those parts suitable for European occupation will become inhabited by trek-Boers who will claim rights of occupation, which, when the land is wanted by the Imperial authorities for sale and occupation by Europeans, it will be found hard to resist.

In the meantime Swaziland must be governed, the border must be protected, smuggling must be checked, dealings in stolen gold, gun-running and sale from illicit distilleries, can no longer be allowed to find so convenient a base of operations.

Provision would have to be made for an annual deficit of at least £100,000.

It is felt necessary, in the first instance, to sweep away all monopolies and concessions, and to cancel all land grants, whether issued by the Swazi king with or without his Council, and whether confirmed by the Swazi court or not (or whether issued by any subsequent authority), except in such cases that may be specially provided for and upon grounds that such have fulfilled the conditions of their concessions or grants, or otherwise not being repugnant

to the general interests of the country, may have justified their existence or continuance.

Areas of mining concessions in some instances overlap each other, and the boundaries of land grants are not conterminous with those of mining areas.

The terms of land grants are positive and active in character. Areas were granted for a fixed term of years against an annual quitrent and for definite active objects. Not in freehold or for objects either passive or permissive. The land or farming grants contain a general clause "for all agricultural and farming purposes," and with a native-protection clause "shall not, however, disturb those Swazi subjects already living on the land," or clauses to a similar effect. As was foreseen, this clause was intended to be inoperative, and was employed as a blind merely to satisfy the Exeter Hall party that the interests of the natives were being safeguarded.

PRELIMINARY INQUIRY.

It is suggested to appoint a private Commission of search and inquiry into the records of and titles to land or leases of land in Swaziland. And this with instructions immediately to take possession of the Register Offices both in Pretoria and Bremersdorp, as well as the office of the Swazi agent in Pretoria, with the object of ascertaining the present condition of Swaziland (having reference to the Pretoria Convention and subsequent conventions), and for framing suggestions for *remedial measures of a permanent nature*, when it probably will be found desirable

TO APPOINT SWAZI LAND GRANT AND CONCESSIONS COMMISSION.

Power A.—To cancel and annul all land grants, concessions, monopolies, rights, privileges or interests which have been acquired by or are held by the Transvaal Government, either in whole or in part; and that with or without compensation to any individual or association or company that may have held back or retained or acquired or claim to be entitled to any rights, privileges, or interests together or in conjunction with either the Transvaal Government or any of its subjects, or the Swazi nation or any of its subjects.

Power B.—To cancel and annul all land grants, land concessions, leases or servitudes, all monopolies or concessions or contracts, whether industrial or otherwise, and all rights, privileges, or interests that may have been acquired by or are held by any individuals, syndicates, associations or companies, either held in part or jointly with others or in whole; and that with or without compensation to any such individual, syndicate, association or company (or compensation in part to the one), and to refrain from awarding compensation to any others, where, in the *opinion of the Commission*, the aforesaid shall have been fraudulent in origin, or now be

fraudulently held, or may be held *contra bonos mores*, or may be repugnant to the general interest or a hindrance to the development of the country.

Power C.—To give notice of cancellation or annulment of any or all land grants or concessions, leases or servitudes, any or all monopolies, concessions or contracts, industrial or otherwise, whether of a public and general or of a specific nature, and any mining or water concessions, grants, leases, easances, servitudes, or privileges, and that either in whole or in part, that may have been acquired or held or may now be held by any individuals, syndicates, associations or companies, either held in part or jointly, with others or in whole, where in the opinion of the Commission it shall appear that the aforesaid shall have been *bona fide* in origin, legitimately acquired, and *bona fide* held at the present time, for the purposes of legitimate use, development, carrying on, employment or fulfilment; but where in the opinion of the Commission it shall also appear that the said purposes or other the conditions expressed in the aforesaid have been obstructed, delayed, defeated, or rendered nugatory by unforeseen circumstances, or the act of God, or the Queen's enemies, or from other circumstances in the opinion of the Commission reasonable, and efficient endeavours have been made and will continue to be made to carry out the said purposes or other the conditions and intentions of the aforesaid; the said notice having been given, and that with or without compensation to any such individual, syndicate, association or company, the said notice shall take effect upon the date specified and except as in hereinafter provided, without further notice, shall be final:—

Except, however, where, in reply to such notice and in such cases as the Commission may think fit, upon application or proper representation made by the aforesaid, either in person or through their representative in manner to be prescribed, the said individual, syndicate, association or company shall apply for suspension of the said notice, and shall adduce satisfactory evidence that reasonable and efficient endeavours have been made to carry on; and shall, if required by the Commission, provide adequate guarantees that the said purposes or other the conditions and intentions expressed in the aforesaid shall be carried out, and the concessions rendered effectual; the Commission may temporarily suspend the said notice and may reopen or reconsider such case, and the Commission may, within the scope of their authority, then, in terms of their instructions, make such further order or ruling as to them under the circumstances may appear just and equitable.

[Here I had the intention to enter into detail, showing how a defined mining area might be granted to replace in part a concession, but subject to mining laws and rules and regulations that might hereafter come in force.]

SWAZI NATIVE RESERVES.

Power D.—The appointment of reliable and trustworthy native Commissioners and the setting apart of adequate areas for native reserves is a question which claims immediate attention.

In connection with this it may be suggested that provision be made for other areas of considerable extent as a source of supply for the Rand Native Labour Department.

The maladministration of the Boer Government, the results of free drink traffic among natives, the malpractices of the lower officials and labour touts, make it very difficult to form a ready estimate; but it appears that the Witwatersrand mining district, together with the collieries, can employ from 100,000 to 125,000 Kaffirs. Taking the number of 100,000 as a basis, however, and assuming that upon 40,000 of these the companies expend the average of £5 per head in costs of its labour bureau, in contracts for labour agencies, commissions, travelling charges, payments to Portuguese authorities, &c., there is apparently a yearly expenditure upon native labour of some £200,000, part of which may be economised by domiciling another source of labour nearer the mines.

Tracts of Swaziland are well adapted, or it would not have been the chosen home of a warlike and manly race, and it would appear that if provision could be made for 20,000 natives in the suggested areas that the revenues of the *Swazi province* would be increased by the hut-tax receipts, while the other moneys now being paid to the Portuguese authorities would be disseminated in the Transvaal State.

To issue 3½ per cent. *Swaziland Provincial Bonds* of £100 or multiples thereof to the extent of £500,000 or less, redeemable at London in the year 1950 at 100, or if earlier at 101, and payable as to the half-yearly interest in London, Cape Town, or Pretoria at par.

To satisfy the concessionaires and claimants out of these bonds, paying the several awards in bonds.

To devote the unused portion of the above Swazi debt for temporary necessities of the Swazi province, as well as providing for the first few years' interest on debt.

Argument.—Whatever the destiny of Swaziland may be, and what may be the place assigned to her among the States of Southern Africa, whether absorbed into an amended Transvaal State or for purposes of administration be treated as a separate unit, the province can well bear the interest on half a million or a million sterling to set her free from the shackles which a maladministration has fastened on her.

The land, the mining industries, the timber, coal and other assets of the province will be set free, and under security for life and property will be exploited.

The time seems opportune, the method seems the simplest and most convenient, the public debt of a million can easily be borne by an unencumbered and emancipated province.

APPENDIX F 2

LIST OF CONCESSIONS FOR PROSPECTING AND DIGGING FOR PRECIOUS METALS, MINERALS,
AND PRECIOUS STONES.

Farm.	District.	To whom Granted.	Date.	Period.	Yearly Amount or Rent.
Ponieskrantz	Lydenburg	David Benjamin ¹	Nov. 10, 1881	Unlimited	£ s. d. 1000 0 0
Lodovine					
Grootfontein					
Waterhoutboom					
Belvédère					
Driekop (Pilgrim's Rest)	" "	Desiré Guibaud, Otto Rothschild, Henri Franck, and Salomon Franck	} July 3, 1882	" "	250 0 0
Spitskop No. 39					
Graskop No. 17					
Berlin No. 343					
Hendriksdal 216					
2 Elandsdrift 41	" "	Adolf Holland, sen., Adolf Astrowsky, and Samuel v. d. Stadt	} July 31, 1882	21 years	1000 0 0
Morgenzon 1487					
1004 mij. 368 v. r.					
Berlin 458					
Lisbon No. 9					
Oorschoot 1003	" "	Benjamin Rhodes Barrett and Charles Hugh Barrett	} April 12, 1883	Unlimited	250 0 0
Ameide 1002					
	" "	Henry Conen, Anthony Goldsn/tn, and Charles Sonnenberg	} April 9, 1883	" "	500 0 0
	" "	D. J. Mulder, J. A. Erasmus, S. W. Burger, and K. Prinsloo	} May 15, 1883	15 years	150 0 0
	" "	G. Hudson	} Nov. 19, 1883	Everlasting	250 0 0
	" "	H. G. Owen	} Jan. 6, 1882	Unlimited	250 0 0
	" "	Moodies Gold Mining and Expl. Co.	} July 31, 1885	Everlasting	274 10 8
	" "	Moodies Gold Mining and Expl. Co.	} July 31, 1885	" "	250 0 0

¹ Now the property of the Transvaal Gold Mining Estates. Controlling house—Messrs. Eckstein & Co.

APPENDIX G

ABSTRACT OF A REPORT ON THE
AGRICULTURAL AND MINERAL POSSIBILITIES OF
CERTAIN DISTRICTS OF THE TRANSVAAL,
AND PARTICULARLY OF THE UNOCCUPIED
GOVERNMENT LANDS.

*Presented to H. H. PRESIDENT KRUGER by D. M. WILSON,
January 1897.*

Beginning at Pretoria, I proceeded *via* Heidelberg, Standerton, Volksrust, Wakkerstroom, Utrecht, Vryheid, Piet Retief, Amsterdam, Ermelo, Carolina, Komati, De Kaap, Machadodorp, Lydenburg, Roos Senekal, Middelburg, Olifant's River, back to Pretoria. Thence to Waterburg, Piet Potgieters Rust, Zoutpansberg, Selati Goldfields, and through part of Rustenburg back to Pretoria. From Pretoria to Wonderfontein *via* the Moot, Potchefstroom, Venterdorp, Hartebeestefontein, Klerksdorp, Bloemhof, and Christiana.

My tour was rendered difficult by the absence of the plans and diagrams promised me, the few I possessed proving very incomplete and in many cases inaccurate, so that I was often dependent on farmers for information on matters that should have been afforded me by proper maps.

I have not thought it necessary to report on the Pretoria district, that being so well known to your Honour.

HEIDELBERG DISTRICT.

Between Heidelberg, Potchefstroom, and Johannesburg I came upon thirty or forty very desirable plots of Government ground (*Uitvalgrond*),¹ varying in size from four to forty morgen. As they are being used by the farmers whose lands they adjoin, they are producing no return to the Government. Although they are for the most part waterless, they could be made valuable by the repeal of

¹ *Uitvalgrond* = Pieces of ground lying between and not included in surveys of farms.

the recently passed law forbidding the turning of water from its natural course.

Speaking as one familiar with the gold conditions of the country, I can say that as those plots lie within the gold belt they will very soon become of value, and for that reason steps should be taken to secure them to the Government by preventing their alienation, a fate which threatens them.

I found that great improvement had been made in the amount of land under meales and forage, compared with its conditions some sixteen years ago; but the farmers have still much to learn, as they refuse to cultivate the higher portions, which are allowed to lie waste, they believing that forage crops can only be raised on the portions along the watercourses.

I was agreeably surprised to find a large increase and improvement in the quantity and quality of vegetables and fruit now grown; gardens have been planted and the farmers derive a good income from supplying the wants of the gold-diggers of the district. Still many hundreds of thousands of acres are allowed to lie idle which could be turned to profitable account.

Town Lands.—I consider that these are unnecessarily large, and I would remind your Honour of the old dispute in the matter of the town and these lands. It will be remembered that the original proprietors of the farm on which Heidelberg now stands gave it on conditions that have never been fulfilled, namely, that the proceeds of the sale of erven be paid alternately to the Government and to the owner. The farm itself was never transferred to the Government, so that it is within the bounds of possibility that the heirs of the owner, who are living in great poverty, may yield to the pressure of certain speculative law agents and enter into possession, their claim being such as would probably be upheld in a court of law. I believe a small sum, paid by way of compensation to the heirs, would ensure the transfer of the land to the Government. This is a matter that calls for prompt attention, for as matters now stand the Government is neither owner of the town nor of the town lands. By a *besluit* taken by the Volksraad in 1878 and another in 1884, instructions were given to have this matter settled, but nothing has been done.

It occurred to me that alluvial gold might be found near the town. I devoted several days to investigation and found deposits, but not sufficiently rich or promising to justify me in advising the Government to follow the matter up. Reef-mining near the portion of the district south of Heidelberg has not, I regret to say, so far proved satisfactory. I found in this district asbestos, mica, and gypsum, which abound in large quantities.

A private person has placed some three hundred poor farmers on about 3000 morgen of land in the south of the district. These settlers are of various nationalities, and the experiment has proved very successful, all of them being in a flourishing condition. They have planted orchards and gardens, which are good and promising.

STANDERTON.

Water in this district is plentiful, but the climate is cold in winter. There is no reason, however, why crops of all kinds should not flourish here, there being facilities for the production of large quantities of grain. Trees succeed wherever planted, but unfortunately the farmers have not arrived at that stage at which they can see profit in tree-planting. Some of the farms possess a few small willow-trees, but that is all. Cattle do well here, many farmers possessing hundreds. No effort is made to provide winter food in the shape of hay, so that they lose in winter what they have gained in summer. Poultry do well here, this being a branch of the farming industry which should be encouraged throughout the Transvaal, especially when we remember that the Free State exported into the Transvaal £26,000 worth of poultry, eggs, &c., last year. This remarkable success on the part of the Free State farmers is attributed to the instruction given the farmers by the expert retained for the purpose by the Orange Free State Government.

VOLKSRUST.

The coldness of the climate in the district renders it unsuitable for farming purposes, and the town only owes its importance to its being a border town.

WAKKERSTROOM.

Wakkerstroom is one of the richest agricultural districts I have seen on my tour. Cattle and sheep farming flourish, and though my visit was made in mid-winter, I never saw a poor ox. Dairy farming pays well, butter and poultry being produced in large quantities, and the farmers as a body are the richest in the Transvaal. The large extent of unoccupied Government lands is admirably adapted for occupation by poor farmers, and I strongly recommend the Government to put some of the *arme Boeren*¹ of Johannesburg and Pretoria here. The cost of starting them with supplies of food and agricultural implements would be much less than the total amount doled out to them at various times in cash and kind.

Minerals.—Wakkerstroom is a district to which the prospector has not yet devoted any attention. I was shown by the Landdrost some very rich specimens of quartz which came from a farm adjoining the town lands. The formation of the Wakkerstroom mountains led me to believe that coal, petroleum, and other minerals exist there. Owing to the richness of the land, the population is to be found almost entirely on the farms, the town consisting principally of houses erected by the farmers to accommodate them during *Nachtmaal*.²

¹ *Arme Boer* = Poor farmer.

² *Nachtmaal* = Communion service.

UTRECHT.

This village possesses many beautiful gardens, but the farms in the district are far too large. A farm of three to four thousand morgen is too much for one man. I found on an average only about six morgen cultivated on farms of three and four thousand morgen. Utrecht being so near the Natal line, excellent facilities are afforded for taking produce to a good market either on the Rand or in Natal. Cattle raising proves so profitable and easy, that the farmers will not trouble to cultivate the soil. Lung sickness and the diseases of sheep are of rare occurrence in the district. I found no trace of minerals in the district.

VRYHEID.

I found a very contented population in this district, especially those engaged in poultry farming to any extent, and as a body they are prosperous. The northern portions are warm, and the possibilities for maize and similar crops are very great. The roads are exceptionally bad, and the introduction of railways would make this one of the most prosperous districts.

PAUL PIETERS DORP.

Paul Pieters Dorp is only three years old. It consists of about ten houses, while the town lands occupy ten thousand morgen, all good for grazing or the plough, and there is plenty of water.

There is an abundance of coal in the district, which the farmers dig and use for themselves as they require it.

There are also mica and asbestos.

In this district is the small German settlement called Luneburg, consisting of about 100 small farmers settled on small plots of land which they have transformed into prolific gardens. They have planted large quantities of Black Wattle and Blue Gum Trees which thrive well, and they produce hay for winter forage which keeps their cattle in excellent condition all through the winter. This was the only place where I could obtain forage for my horses. The great drawbacks are the roads and river drifts, which at times are almost impassable.

PIET RETIEF.

Piet Retief is a thriving little village which largely owes its prosperity to the loans advanced judiciously to the farmers by Mr. Tosen, member of the First Raad for the district. It is also the centre of trade with Swaziland.

AMSTERDAM.

Amsterdam is sparsely inhabited by very poor farmers. Sheep flourish here, and the possibilities of the district are great, but little

or nothing has been done to take advantage of them. Stream tin is found in most of the natural watercourses.

ERMELO.

Ermelo being a very large district I visited only part of it. Wherever I went I found wealthy farmers owning large numbers of sheep and cattle, but agriculture is sadly neglected.

I found mica, gold, asbestos, and sapphires here, and from indications I have no doubt that diamonds exist, though whether they would be payable is impossible for me to say.

The climate is medium, being very cold in winter.

CAROLINA.

What I have said of Ermelo applies to this district.

The soil is a beautiful rich loam, and runs for miles along the banks of the Upper Komati River, but no use is made of it.

There are no Government lands.

KOMATI.

Komati is very warm and practically uninhabited except in the winter, when the *trek-Boeren*¹ go there. I saw only a few Kaffir gardens. Poor farmers might be placed here advantageously, as it is a splendid cattle district. There are large tracts of Government ground. There are mineral springs here which are highly spoken of, and minerals are plentiful. I saw gold, copper, iron, tin, lead, mica, the latter being in the largest sheets I have seen in the country, and if opened up would prove highly payable. I saw also remains of ancient gold workings.

DE KAAP.

This district, as your Honour is aware, consists of over two million morgen, all Government ground, with ample water and facilities for profitable farming. Of the gold-producing capabilities there is no occasion for me to speak.

When I was Gold Commissioner of the district I impressed upon the Government the wisdom of its spending a few hundred pounds to prove the depth at which the alluvial deposits extends, there being every reason to believe that the whole of the De Kaap Valley basin is a rich alluvial deposit, as wherever shafts have been sunk, this theory has been supported.

I still adhere to the opinion on this subject I have so frequently expressed to your Honour. The advantage of proving this theory would be, it would encourage the poor diggers instead of the members of rich syndicates, who hasten to amass money and leave the

¹ *Trek-Boeren* = Farmers going to the low country with their stock.

country. I particularly draw your Honour's attention to the facilities offered by the Elands River Valley for settlement by poor farmers. It is sad to see mile upon mile of the richest soil in South Africa lying idle.

The nearness of the spot to the Delagoa Bay Railway makes this an ideal district for farming, and part of it is Government land. The only cultivation is done by a few Kaffirs, and I saw mealie plants twelve feet high bearing three to six cobs apiece. Everything that is grown in South Africa will grow and flourish here, yet no use is made of it.

MACHADODORP.

There being nothing to be seen in this cold and dreary spot, I made no stay here.

LYDENBURG.

This mountainous and well-watered district offers excellent inducement for the cultivation of tobacco, the leaf grown here being the finest I have smoked in the Transvaal.

Lung sickness in cattle is very prevalent, and calls for a strict system of isolation of infected spots. Not one-tenth of the gold resources of this district are known, it being very rich in both alluvial and reef.

ROOS SENEKAL.

Although this district is wonderfully fertile, I found the inhabitants more poverty-stricken than any I have met in the Transvaal. They mainly consist of *arme Boeren*, who, instead of benefiting by their being placed in a position to improve their condition, have deteriorated, and live in a condition of squalid misery and poverty. Their only excuse is that they are far from any market and the roads are very bad. Until the railway reaches them their condition is not likely to improve. Nearly all the land in the district is Government land, and affords room for thousands of poor farmers; but to place them here on the old system would result in making their condition even worse than at present.

OLIFANTS RIVER.

The fertile character of this district is well known to your Honour, so I will merely call attention to the fact that the Government lands here open for settlement are very extensive. This district has always had a bad reputation as a fever country. This character it does not now deserve, as fever has now been rare for years.

MIDDELBURG.

The cobalt, coal, and iron ore of this district are too well known for remark. It is a good district for cattle, part of it being very

warm; but very little improvement or advance of an industrial character has been made during the fourteen years I have known it. I found cinnabar and opals here.

The extensive salt pans could be turned into a profitable industry by the introduction of the necessary machinery.

I also found borax.

The Government owns large tracts of land in this district, but owing to the incomplete character of the maps and diagrams, I was dependent upon local information as to their extent.

From Middelburg I returned to Pretoria, having completed a tour covering 1000 miles.

WATERBURG.

The agricultural advantages of this large district are well known to your Honour.

I would, however, direct your attention to the vast possibilities there are for the profitable cultivation of fruit, coffee, and cocoa. Not one thousandth part of the rich district is utilised. It is nearly all owned by the rich farmers of the high veld, who use it as a winter retreat for their cattle.

The little cultivation is done by Kaffirs, and the yield of mealies, wheat, and Kaffir corn is prolific in the extreme.

Minerals exist in larger quantities and varieties than is supposed. I found quicksilver, free from cinnabar, a ruby, and zinc. A rare and valuable black diamond has been discovered here. Owing to the uninhabited condition of the district, I was not able to go far into it.

PIET POTGIETER'S RUST.

This place could be made, and probably will become, a thriving township.

The soil is rich over a vast area, and well watered from the River Nyl, whose supply is unlimited.

The place suffers very considerably as a result of the character of the leading officials, who have been very unfortunately chosen.

Within a very short distance of this place is a very extensive unworked alluvial gold-field, which, however, will require to have water led to it before it could be worked. It is here that the very successful farm was founded by Amm of Johannesburg, the plantations of orange and other fruit trees proving highly successful.

PIETERSBURG.

Pietersburg has made great strides lately. As an example I may mention that I gave a small plot of ground here to a farmer six years ago. It was then worth £20, but by planting a vegetable garden and orchards, the plot has been increased in value to £800.

Corn and mealies flourish here, but the district suffers much from locusts.

Alluvial gold exists here in payable quantities, but the reef mining has not proved a success.

HANEARTSBURG AND SELATI GOLDFIELDS.

I found a few farmers here who had been located by the Government four years ago. They have succeeded well, having erected good residences from the timber in the Government forests, but the distance from a market is a great drawback. The LETABA is inhabited by a few diggers, but gold does not pay, and I was not favourably impressed by the place or its possibilities. The number of lions in the district renders it unsafe for habitation and settlement.

SELATI TO PIETERSBURG.

Vast tracts of Government land exist here, and copper is found in large quantities. It is taken from the Massene copper mines by the natives and smelted in a crude manner.

An assay I had made gave a payable percentage of gold.

I consider that in this the Government have an asset quite equal in value to the gold mines of the Rand.

MAGATOLAND.

Magatoland I did not go into, but from inquiries I made of those who had been there, I was satisfied that if ever this district comes under the full control of the Government, it might with advantage and profit be given out to poor farmers, as it is very fruitful, and Kaffir labour is cheap and plentiful.

RUSTENBURG.

I did not consider it necessary to travel over the large area of Government land in this district, as it is well known to your Honour. I went along the Crocodile River some sixty miles, and found it very fruitful, but only inhabited by stray Kaffirs.

I found cinnabar, lead, opals, and nitrate of soda and diamonds.

The district south-west of Pretoria I visited only with the object of locating minerals, which makes the subject of another report.

At LICHTENBURG I found indications of diamonds.

RECOMMENDATIONS.

Vryheid.—The matter of the bad roads calls for prompt attention. People complain of the neglect of the road inspectors.

Heidelberg.—The matter of the town lands and the transfer of them and the town to the Government is urgent, if future difficulties are to be avoided.

Lydenburg.—The farmers are clamouring for the railway, and express their disgust at the matter having been postponed.

Roos Senekal.—No notice should be taken of the complaints from this district. The people are lazy, and expect the Government to maintain them.

Waterburg.—There are great complaints here that the *Plakkerswet* is not strictly enforced, the chief offenders being officials.

Pietersburg.—Complaints are very numerous on the score of the neglect of the road inspectors. A suggestion for the establishment of an agricultural department to instruct the farmers as to the best stock to procure is worthy the attention of the Government.

Carolina.—Great dissatisfaction and discontent is expressed by the farmers in regard to the construction of the bridge over the Komati, which they allege has been erected in the wrong place. On inspecting it, I found their complaints justified, and am fully in accord with them. The Government may expect deputations from the district on this subject.

APPENDIX H

TRANSVAAL LAND

(COMPILED BY J. C. MINNAAR, ESQ., REGISTRAR OF DEEDS, PRETORIA.)

FARMS OWNED BY PRIVATE OWNERS.

Name of District.	Surveyed.		Inspected and Estimated.	
	Freehold Farms.	Quitrent Farms.	Freehold Farms.	Quitrent Farms.
	Morg. ¹ Rod.	Morg. Rod.	Morg. Rod.	Morg. Rod.
Pretoria . . .	790,665-320	491,011-434	182,701-172	260,840-546
Potchefstroom . .	535,004-314	658,592-31	115,135-00	254,308-00
Rustenburg . . .	475,580-451	650,489-7	176,882-00	929,191-00
Lydenburg . . .	172,888-248	1,234,464-140	124,553-00	883,518-00
Middelburg . . .	198,389-469	1,134,847-370	19,000-00	174,206-00
Waterberg . . .	163,065-317	960,035-270	221,186-00	1,900,705-00
Zoutpansberg . .	...	604,341-312	9,100-00	1,540,265-00
Heidelberg . . .	412,993-169	373,130-259	34,599-00	18,075-00
M. W. Stroom . .	51,127-461	579,245-559	12,900-00	119,450-00
Utrecht . . .	221,795-413	273,244-582	3,000-00	19,150-00
Marico . . .	141,189-97	330,811-97	52,430-00	209,791-376
Lichtenburg . . .	250,727-504	778,932-502	36,950-00	132,500-00
Bloemhof . . .	...	659,411-29	15,010-00	20,485-00
Ermelo . . .	74,179-302	1,178,501-403	...	34,699-00
Piet Retief . . .	...	424,606-457	...	8,500-00
Vryheid . . .	...	769,337-488	...	204,443-00
Carolina . . .	97,477-130	361,938-296	15,000-00	105,770-00
Krugersdorp . . .	182,652-212	120,057-372	33,652-00	33,310-00
Total . . .	3,854,697-523	12,229,436-264	1,059,107-172	6,889,415-322

¹ Morgen = 2.112 acres. The recognised size of a Transvaal farm is 3750 morgen, but notwithstanding this they vary greatly in size.

APPENDIX H

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GOVERNMENT FARMS.

Name of District.	Surveyed.		Inspected and Estimated.	
	Freehold Farms.	Quitrent Farms.	Freehold Farms.	Quitrent Farms.
Pretoria	Morg. Rod. 228-268	Morg. Rod. 22,046-334	...	Morg. Rod. 7,960-00
Potchefstroom	1,579-247	17,147-373	...	11,500-178
Rustenburg	...	153,901-219	...	329,142-300
Lydenburg	15,173-167	290,882-11	1,000-00	135,902-147
Middelburg	...	36,377-558	...	15,783-00
Waterberg	...	601,979-296	...	1,126,141-00
Zoutpansberg	...	121,992-20	...	663,560-00
Heidelberg	928-480	9,599-104	...	1,680-00
M. W. Stroom	...	4,288-240	...	4,000-00
Utrecht	...	7,274-567	...	38,300-00
Marico	...	63,726-340	100-00	34,015-00
Lichtenberg	...	62,125-93	...	6,380-00
Bloemhof	...	52,316-185	...	10,350-00
Standerton	...	7,192-450	...	5,600-00
Ermelo	...	9,101-238	...	...
Piet Retief	...	94,648-127	...	...
Vryheid	...	38,470-240	...	29,325-00
Carolina	...	67,221-433	1,500-00	6,000-00
Krugerdsorp	2,043-75	2,437-586	100-00	...
Total	19,953-237	1,662,730-014	2,700-00	2,425,639-025

RECAPITULATION OF DISTRICTS.

Name of District.	Number of Farms belonging to			
	Inhabitants.	Non-Residents.	Limited Companies.	Government.
Pretoria	536½	1	16	39½
Potchefstroom	327	7½	33	45½
Rustenburg	501	78	180	224
Lydenburg	415	26½	324	272½
Middelburg	{ 398½ 127	9 Mapochs- gronden	87½	23
Waterberg	497½	118	934½	808
Zoutpansberg	{ 821½ 46	64½ grondrecht- certificaten	346	652
Heidelberg	194	8½	52	14½
M. W. Stroom	328½	7	2	5½
Lichtenburg	270	...	21½	32½
Marico	212½	5½	8	58
Bloemhof	256½	13½	14	43
Piet-Retief	170	12	18	22
Utrecht	225	3	...	28
Ermelo	213	...	46	2
Standerton	192	2½	4½	7
Vryheid	545½	10½	6	38
Carolina	195½	2½	11½	25½
Krugerdsorp	92	...	17½	8½
Wolmaransstad	163	5	1	5
Bethal	124	1½	1	1½
Total	6851½	375½	2124	2355½

APPENDIX J

STATISTICS COMPILED BY H. W. SCHNEIDER, Esq.,
OF PRETORIA

The local markets of South Africa imported the undermentioned products according to official statements in the years 1896 and 1897, as follows:—

TRANSVAAL.

1896.

		Import Value.	Market Value. ¹
	lbs.	£	£
Sugar	20,396,720	161,301	322,602
Tobacco	781,290	42,759	85,518
Snuff	6,540	1,633	3,266
Cigars *	8,411,150	72,391	144,782
Cigarettes *	2,546,780	3,965	7,930
Tea	1,341,670	56,893	113,786
Coffee	3,645,070	122,135	244,270
Fruits	21,141,950	119,697	239,394
Wood prepared (no furniture)	...	328,947	657,894
Wood (raw)	...	271,868	343,736
Furniture, &c.	...	356,787	713,574
Flour, mealies, and Kaffir corn, &c.	...	1,084,115	2,168,230
Vegetables (conserved)	...	30,619	61,238
Vegetables (fresh)	...	5,371	10,742
Total	...	2,658,481	5,316,962

* Number of.

¹ [Mr. Schneider's estimate of the market value is taken at 100 per cent. above the import value. For many of the articles this is too high.—W. B.]

1897.

		Import Value.	Market Value.
	lbs.	£	£
Sugar	26,308,390	199,483	398,966
Tobacco	758,000	44,154	88,308
Snuff	6,720	1,914	3,828
Cigars *	7,293,930	60,917	121,834
Cigarettes *	2,684,270	4,320	8,640
Tea	997,000	49,132	98,264
Coffee	3,919,050	99,428	198,856
Fruits	27,365,020	126,066	252,132
Wood prepared (no furniture)	...	258,741	517,482
Wood (raw)	...	178,145	356,290
Furniture, &c.	...	317,636	635,272
Flour, mealies, and Kaffir corn, &c.	...	741,460	1,482,920
Vegetables (conserved)	...	38,814	65,628
Vegetables (dried)	...	6,170	12,340
Total	...	2,120,380	4,240,760

* Number of.

ORANGE FREE STATE.

1896.

		Import Value.	Market Value.
	lbs.	£	£
Sugar	5,704,648	38,265	76,530
Confectionery	188,632	4,975	9,950
Tobacco, cigars, cigarettes	20,573	5,627	11,254
Tea	147,020	4,062	8,124
Coffee	2,010,889	57,014	114,028
Wood (raw)	...	12,846	25,692
Wood (prepared, &c.)	...	11,314	22,628
Flour, &c.	...	3,685	7,370
Corn, &c.	...	7,544	15,088
Vegetables (conserved) and fruits of all } kinds	...	523	1,046
Total	...	145,855	291,710

1897.

		Import Value.	Market Value.
	lbs.	£	£
Sugar	7,016,115	44,902	89,804
Confectionery	251,125	6,157	12,314
Tobacco, cigars, cigarettes	24,051	6,444	12,314
Tea	161,712	6,030	12,060
Coffee	2,322,545	41,831	83,662
Fruits	78,008	1,822	3,644
Wood (raw)	...	17,212	34,424
Wood (prepared, &c.)	...	12,664	25,328
Corn, &c.	...	16,007	32,014
Flour, &c.	...	4,429	8,858
Vegetables (conserved)	...	568	1,136
Total	...	158,066	316,132

NATAL.

1896.

		Import Value.	Market Value.
	lbs.	£	£
Sugar (refined)	346,452	2,546	5,092
Sugar (not refined)	390,512	2,439	4,878
Tobacco, cigars, cigarettes	208,460	36,830	73,660
Tea	1,148,460	21,004	42,008
Coffee	2,422,180	88,073	176,146
Fruits	1,165,831	12,527	25,054
Wood (raw)	...	221,164	442,328
Wood (prepared, &c.)	...	91,077	182,154
Wood (diverse, no furniture)	...	55,866	111,732
Corn, flour, &c.	...	527,204	1,054,408
Vegetables and potatoes	...	7,045	14,090
Total	...	1,065,775	2,131,550

1897.

		Import Value.	Market Value.
	lbs.	£	£
Sugar (refined)	497,483	3,318	6,636
Sugar (not refined)	4,670,848	25,913	51,826
Tobacco, cigars, cigarettes, ...	...	52,088	104,176
Coffee	3,264,328	56,419	112,838
Tea	386,351	13,288	26,576
Fruits	952,094	14,700	29,400
Wood (raw)	...	173,015	346,030
Wood (prepared, &c.)	...	78,041	156,082
Corn, flour, &c.	...	338,277	676,554
Vegetables and potatoes	...	5,170	10,340
Wood (diverse, no furniture)	...	58,418	116,836
Total	...	818,647	1,637,294

CAPE COLONY.

1896.

		Import Value.	Market Value.
	lbs.	£	£
Sugar (not refined)	54,987,678	341,985	683,970
Sugar (refined)	7,258,772	48,839	97,678
Tobacco (not manufactured)	243,935	10,083	20,166
Tobacco (manufactured)	263,746	102,907	205,814
Tobacco (all other kinds)	511,218	87,447	174,894
Tea	2,246,291	73,648	147,296
Coffee	14,329,186	400,854	801,708
Wood (raw)	...	217,108	434,216
Wood (prepared)	...	119,763	239,526
Wood (diverse, no furniture)	...	101,648	203,296
Corn, mealies, flour, &c.	...	553,526	1,107,052
Furniture, &c.	...	343,074	686,148
Total	...	2,400,882	4,801,764

1897.

		Import Value.	Market Value.
	lbs.	£	£
Sugar (not refined)	59,856,162	345,620	691,240
Sugar (refined)	9,768,133	57,242	114,484
Tobacco (not manufactured)	332,008	10,843	21,686
Tobacco (manufactured)	279,794	94,305	188,610
Tobacco (all other kinds)	668,958	110,175	220,350
Tea	2,489,583	83,088	166,176
Coffee	16,599,715	310,253	620,506
Wood (raw)	...	195,564	391,128
Wood (prepared)	...	141,329	282,658
Wood (diverse, no furniture)	...	110,293	220,586
Furniture, &c.	...	354,140	708,280
Corn, mealies, flour, &c.	...	679,103	1,358,206
Total	...	2,491,955	4,983,910

Sugar, tobacco, tea, and coffee are produced in small quantities in Natal, but not sufficient for local demand. The Cape Colony and Orange Free State are not suitable for growing these products, so that practically the whole of South Africa is available as a market for these products from the Transvaal.

APPENDIX K

NATAL IMMIGRATION

By W. P. FRASER, ESQ.

Keynote.—“I feel that our interests in South Africa are not safe unless and until some 25,000 additional Anglo-Saxon and British-Colonial settlers are placed upon and identified with the land, and I perceive that many anxious questions will then settle themselves.”

Proposal.—It is proposed that application be made to the Department of Agriculture for countenance and assistance in this work. That thereafter use be made of the Farmers' Associations, in the first instance, of the Upper and Midland Districts of Natal, and appeal be made through their organisations to the farmers, and they be recommended to apply for and receive into their homes for training, during the first experimental years of the period proposed, of at least one hundred youths and one hundred young women, selected under the auspices of the Women's Patriotic League, from the Muller Orphanage, from the Barnardo Home, or from kindred institutions of Great Britain.

Remark.—It is remarked that the Arnold Foster Commission will soon be at work upon this theme, and it is suggested that reference be made to that Commission.

Retort.—But it is pointed out that the Colony of Natal can help herself in the following manner to her own great advantage at a small initial outlay, nearly all of which will flow back again into the Treasury.

NATIONAL POLICY.

Argument.—It is time that the Colony of Natal realised that some national steps be taken to make her position assured, and by making her more powerful within herself, place her borders free from incursions. What better course presents itself than by increasing the producing and tax-bearing population of the country districts? This must be of the British race. Youth is the time that is the most impressionable, and the youth of both sexes is more easily absorbed and incorporated in and identified with the

interests of the colony than a like number of older persons, whether soldiers, reservists, or civilians, emigrants whose habits of life may have been formed under other circumstances, and who may not find it easy to adapt themselves to a set of conditions foreign to them.

ECONOMICS.

Experience.—The continual drain of agricultural districts and the flow of its manhood into larger cities and industrial centres, has been a marked tendency of the latter half of the past century. This was exemplified in the congested state of the larger cities of Australia.

It is noteworthy that, concurrent with an increased attention to her natural resources, and the better marketing of her agricultural products, and a reflux of population from the overpopulated centres to the farming districts, came a return of prosperity.

The colonists of Natal are now consuming imported butter, cheese, dried and canned fruits, forage, oats, potatoes, and a score of other articles of farming and domestic produce, a considerable proportion of which can and ought to be produced in this country.

SOCIAL AND DOMESTIC.

Aspect of.—Following on the re-opening of the mines at the Rand, and an expected demand for mine labour in other districts, our households are sure to feel this drain upon domestic labour in very many ways.

Surely it is possible to replace the use of Kaffir boys for domestic service, to a certain extent, by giving the proposed system a fair trial.

Very many objections familiar to all householders are raised—

Remark.—“Dwellings in the country are not constructed suitably for the introduction of domestic white labour.”

“Our social system will hardly admit of the employment of a young white servant in the house without placing her on terms of too great intimacy with our families.”

“Our domestic labour system is based upon native labour for the stock and cattle, upon native and coolie labour for the plantation and garden, upon the use of Natal Zulu boys for domestic service in the kitchen and house. I could not introduce another domestic element, and possibly a discordant one, into my house.”

Retort.—It is pointed out that difficulties in life are no new theme for discussion; they exist everywhere, and come under notice to be overcome. It is not contemplated to invite farmers to apply at random for domestic help, nor to attempt to fill the want by indiscriminate investigation, nor to supply domestic “help” without careful investigation as to the character of applicant’s requirements and the nature of the immigrant “help’s” capacities,

nor, indeed, except under a three years' contract with certain guarantees and obligations.

Objections Disappear.—It remains for the ladies of this colony, through, perhaps, the auspices of the Women's Patriotic League, to find a way through the objections raised. Probably the answer will be found in the fact that the number of applications for young girls to be trained as under nurses, or for dairy work, or for domestic work, will very largely exceed the possible supply.

Religions.—No new organisation is contemplated, no fresh departure asked for, the existing institutions already cover the proposed field.

Church Duty.—It is thought that the various Protestant Churches, if they will divide the work amongst them so as not to overlap, can use their existing forces and follow the career of each immigrant farm "hand" or domestic "help" until the three years' contract shall have expired, and until he or she shall have become strong enough to stand alone.

This was done in Canada under a system of correspondence.

A register was kept of the immigrants, and his or her career was marked, in very many cases with gratifying results.

This is pre-eminently a Christian work, and one which the Protestant Churches may be asked to take up, seeing they have the organisation ready to hand.

Financial.—The result of an inquiry at the Institution mentioned as to the conditions upon which the domestic servants and the farm helps will be allowed to emigrate will be forthcoming from the Institutions, and can be based upon the experience gained during the past twenty years of similar work in Canada. The cost per head of bringing them from their present homes and placing them at their destination, it is hoped, may not exceed £15, and it may be made up thus:—Steamer fare by direct line, London or Southampton to Durban, if in parties of not less than fifty or one hundred, each say £10; outfit in necessary articles of clothing for the first season, £4 or £5; railway fares in Natal, with food, £1; local administration and housing may cost £2 per head extra.

Subject to inquiry, it appears that the total initial cost of introducing fifty young women for domestic servants, and fifty youths for farm helps, during the first season might be £1700, which, with a similar enterprise for the second season of the first year, would mean a total initial expenditure of £3400. Towards this, and as an earnest of *bona fides*, the applicant should pay a deposit of £5 per head, which should be recoverable from the immigrant in monthly deductions from wages during the last ten months of the first year's service of 10s.

The remaining £12 should be repaid in like manner in 10s. monthly payments during the second and third year's service, and should be guaranteed by the applicant. It could remain for consideration whether Government, through an Immigration Bureau,

might not agree to refund to each immigrant, who should have fulfilled his or her term of service to the approval of the Bureau, the sum of £5 by way of commendation or bonus.

Disappointment and failure are met with in every path of life, and it is fair to assume that this undertaking will not escape them. But allowing 10 per cent. for comparative disappointment and 10 per cent. for failure, it is pointed out that the average wages of a domestic help who should have fulfilled her three years' term of service, whether as domestic servant or dairymaid or nurse, may be placed at 50s. to 60s. per month. The earnings of the immigrant youth after the same term may be placed at a minimum of £5, and experience may show it much higher, for some may acquire trades. The capital value of the former being now a producing and tax-bearing unit, may be regarded as a State asset, and put at £100—that of the latter say £300.

The Colony of Natal will have added to its national wealth to that extent at a cost of £5 per capitum.

ADMINISTRATION.

The proposals as outlined here should be laid before his Excellency the Governor of Natal, and an expression of his sympathy and approval having been obtained :—

Inquiry should be made of the direct line of steamers to Durban as to the facilities and accommodation afforded for immigrants of this class in parties of not less than 50 or 100.

Inquiry should also be made of the cost of housing and railway transmissions to probable destination, estimated as north of Maritzburg.

The sanction of his Excellency having been obtained, the assistance of the Honourable the Agent-General for the Colony in London should be sought, and all the desired particulars obtained from the Muller Orphanage at Bristol, from the Barnardo Home at Stepney Causeway, and from kindred institutions (notably in Scotland). These particulars should be more ample than appear in the usual Annual Reports of the Institutions, and should cover the results and experiences of emigration to Canada.

Applicant Farmer.—It is thought that some general form of contract will have to be prepared and signed by the applicant farmer seeking immigrant help, at the same time making a money deposit as earnest of *bona fides*. In outline, the applicant expresses himself willing to receive such person with intent to train him or her in the avocation mentioned upon the lines of the objects of the institution, and for the other ends and purposes mentioned, and accepting and becoming liable to the Immigration Bureau for the obligations to be mentioned.

Three Years.—The contract should be for three years, a less term being too brief for very many considerations, while an attempt to

enforce the continuance of a longer contract against the will of an immigrant would prove mischievous.

Wages.—Wages for female immigrant, whether for domestic help, dairymaid, or nurse, might be placed at perhaps 30s. a month for the first, at 40s. per month for the second, and at 50s. per month for the third year, with housing and board.

Immigrant Signs.—The immigrant should also enter upon the engagement required of him or her by signing a contract in favour of the Immigration Bureau, agreeing to enter the service of its nominee, the applicant, for a term of three years upon the conditions and at the rate of wage mentioned, and agreeing to sign a more explicit contract upon arrival at destination.

It is not to be supposed that the institutions named whose organisations have been devoted to adopting and training of penniless orphans, and in rescue work of a general character, will consent to hand over these young persons even to an Immigration Bureau without stipulations and without taking every precaution that the rescue work just begun will be continued in the form of home and domestic training or other avocation, until the immigrant passes out into the world.

Here commences the work of the Church, and if the Protestant Churches of Natal will engage to keep in touch with the young persons during their term of contract, and exercise the desired supervision, then the final success of this scheme will be assured.

The framer of these suggestions offers them as an attempt to meet the many objections that are made to any system or scheme of immigration, and presents them in the belief that the difficulties which so continually appear are rather imaginary and sentimental than real. He believes they will disappear, and thinks the scheme proposed to be the one that will, in the speediest and most effective and least costly manner, attach the youthful immigrant to the land in Natal.

DURBAN, Oct. 20, 1900.

APPENDIX L

EMPLOYEES IN MINES ON THE RAND.¹

	Number.	Total Wages.	Wages per Month.		
		£	£	s.	d.
Managers	154	14,840	96	7	3
Mine foremen	144	6,038	41	18	7
Battery managers	91	3,805	41	16	3
Other foremen	284	7,199	25	7	0
Machinists	116	5,014	43	4	6
Surveyors	98	3,041	31	0	7
Draughtsmen	29	815	28	2	7
Electricians	164	4,345	26	9	11
Secretaries	131	4,741	36	3	10
Mine and store clerks	261	5,790	22	3	8
Mine overseers	202	6,364	31	10	1
Miners and trammers	2283	51,806	22	13	10
Bore men	1914	58,309	30	9	3
Pitmen	338	6,508	19	5	1
Machine drivers	954	25,236	26	9	1
Oilers	40	719	17	19	6
Pump men	129	3,285	25	9	4
Stokers	157	3,217	20	9	10
Carpenters	944	24,415	25	17	3
Smiths	782	21,025	26	17	9
Fitters and helpers	1047	27,400	26	3	5
Painters	59	1,274	21	11	10
Masons	198	5,172	26	2	5
Day labourers	192	3,246	16	18	1
Assayers	108	3,073	28	9	1
Amalgamators	468	11,108	23	14	8
Cyaniders	379	9,227	24	6	11
Concentrators	19	394	20	14	9
Vanners	48	990	20	12	6
Smelters	6	166	27	13	4
Different labourers	674	14,058	20	17	2
	12,413	332,620			

¹ State Mining Engineer's Report.

APPENDIX M.

EXTRACTS FROM A.

PAMPHLET ISSUED BY THE REFUGEE COMMITTEE OF THE UITLANDERS

CAPE TOWN, *15th October 1900.*

THE UITLANDER REFUGEE AND THE TRANSVAAL CAPITALIST.

The Uitlander Refugee Committee having invited Dr. M. J. Farrelly (the Counsel instructed by Messrs. Faure and Zietsman to advise on the validity of the Proclamation of 20th August 1900, issued in the name of the Administrator of the Transvaal, and against which the recent mass meeting protested) to write a memorandum on the legislative steps which ought to be taken in justice to the expelled Uitlander Refugees, and in furtherance of the welfare of the Empire, involved in the maintenance of a large and prosperous British population in South Africa, they think that this document should not be withheld from the public and issue it herewith. (See Appendix N.)

The Committee think it desirable in the public interest to state plainly why the alarm and unrest among the Uitlander Refugees has been so great.

With the knowledge possessed by all Uitlander residents of the Transvaal of the past history, methods, and definite policy of the great financial houses, they are becoming alarmed at the rapid increase of the wealth, influence, and unrelenting enterprise of the latter.

Their "freezing-out" tactics and their formidable secrecy in operation are thoroughly well known to Johannesburg residents, of whom a large number hail from the Kimberley of the early days.

The alarm became consternation when it became known that the representatives of the great mining interests, who for years "persuaded" the Pretoria Government and officials, are now surrounding the new Administration of the Transvaal.

The great wealth of the capitalists of the Rand has given them

the control of nearly every one of the leading organs of the press of South Africa. Former agitation among the Uitlanders, as long as the great capitalists were intent on exploiting their grievances, was carefully cabled to England, and the South African press daily devoted their leading articles towards voicing the public outcry. How many cables have been sent of the recent mass meeting in the Drill Hall? We believe none—while the capitalistic press has been significantly silent on this vital question, abstaining from even the barest comment on the subject of the new agitation.

The legal profession has been similarly captured. The leaders of the Bar in the Transvaal, with hardly an exception, hold annual retainers from the great houses; therefore if any of the rank and file of the Uitlanders sue or are sued by the latter, he is prevented from availing himself of the best legal talent.

MEMORANDUM

On the Development of the Mines in the Transvaal and the Economic Measures bearing on the Increase of British Immigration, the retention of the present British Population, and the strengthening of the Imperial hold on South Africa.

I. THE NECESSITY OF ENCOURAGING IMMIGRATION—THE MEANS.

To render perfectly secure the Imperial hold on South Africa, every encouragement should be given to increased British immigration in the Transvaal and the Orange River Colony. This line of policy has been admitted by all parties in the Empire and by the Imperial Government—which has appointed a Commission to inquire into the matter—as plainly a necessity of the hour.

Immigration on a large scale can obviously be only immigration of agriculturists. Enormous cattle-runs, ranging from 3000 to 8000 acres each for a single family, can only afford room for a very sparse population.

Agriculture over wide areas in South Africa, precisely as in India, depends on the execution of very extensive schemes of irrigation. The land over wide areas, in the Transvaal especially, is very fertile. The waterfall is amply sufficient to admit of the whole of these areas being cultivated. Enough water is wasted every year, resulting from the melting snows of the Basutoland Mountains rushing down to the sea in the Orange River, to irrigate the whole of the Orange River Colony. The same may be said with reference to the Transvaal and the perennial water-supplies of the tributary streams of the Limpopo and the Vaal River.

State-aided immigration and State-constructed irrigation works are therefore as much political as economical necessities in the new colonies.

The funds for these two lines of State action can only come, to any appreciable degree, from the immense mineral wealth of the territories. It is not to be supposed that taxation in the United Kingdom is to be resorted to when such a manifestly just appropriation of the wealth of the State is at hand.

Therefore a perfectly free hand for the representatives in South Africa of the Imperial Government in its taxation of the exploitation of minerals is clearly a matter of Imperial concern.

Again, agriculture in South Africa, to support a thriving population, must have markets at the very door. It is absurd to suppose that, situated at such a distance from the United Kingdom and Europe, South African produce-growers could compete with such grain and other agricultural produce as can be supplied so much nearer from the United States and Russia.

Therefore every measure which tends to aid the increase of a large urban, industrial, and mining population of consumers makes directly for the Imperial welfare.

Any measure of policy which tends—

1. To limit the freedom of the regulation of taxes by the Imperial representatives on the minerals; or
2. To discourage the exploitation of new gold-fields or other mineral fields; or
3. To discourage the growth of a large industrial and mining population,

is directly contrary to the interests of the Empire as a whole, to the encouragement of the outlet of emigration—and its economic relief to the overcrowding of the United Kingdom—and to the political necessity of safeguarding the Imperial hold in South Africa, which would be insured by the presence of a large and loyal British population.

II. THE NECESSITY OF PREVENTING THE EXCLUSION BY ECONOMIC PRESSURE OF THE ALREADY EXISTING BRITISH POPULATION.

All the considerations which apply to measures for promoting the growth of British immigration are equally applicable to the retention of the present British population of these territories—now the Uitlander refugees.

Any measure calculated to have the effect of diminishing their prospects of economic prosperity, or of excluding them from the goldfields by economic pressure, is obviously opposed to the welfare of the Empire as a whole.

III. THE OPPOSITION OF IMPERIAL INTERESTS TO THOSE OF THE PRESENT MONOPOLY OF THE MINES IN THE TRANSVAAL.

In every one of these cardinal features of obvious Imperial policy already enumerated the interests of what is practically the present monopoly of the mines in the Transvaal are opposed.

1. *Taxation.*—The obvious interest of the present great groups which hold a practical monopoly of the Transvaal mines is to check the imposition of any taxes—for immigration, for irrigation works, for any public works except for facilities for the transport of gold-mining machinery and supplies—and to retain as much as possible of the gold for themselves.

2. *Exploitation of New Mines.*—Until the present governing groups shall have successfully floated off all the deep level and other properties in their possession, or over which they hold options—a time which must necessarily be extended until all can be absorbed by the purchasing power of the investing public at home and elsewhere—it is their obvious interest to check the development of other mining centres. Such development would not merely interfere with the floating of their own vast properties, but it would interfere with their present practical monopoly of the profitable business of company promoting.

3. *Growth of a Large Trading, Industrial, and Mining Population.*—This growth, which it should be a cardinal principle of Imperial policy to promote, is directly opposed to the interest of the groups of great houses who monopolise the mines of the Witwatersrand.

It is not necessary to postulate the existence of a double dose of original sin in directors and servants of the great capitalist houses to deduce that they will tend to act in the direction pointed out by their manifest interest. The rich man—otherwise the great financier—is, as has happily been pointed out, simply a poor man who happens to be rich; while the growth of idealism is not fostered by successful financial or other business methods. But it is to be carefully borne in mind that while generosity may be the privilege of a decemvir, zeal is expected from those who wait on Appius Claudius.

IV. THE ALARM OF THE UITLANDER REFUGEES.

1. *The Mass Meeting of Protest.*

Widespread alarm among the Uitlander Refugees has been created by recent legislation and appointments to official posts by the present Military Government of the Transvaal.

On the 22nd September a mass meeting of Uitlander Refugees was held at the Drill Hall in Cape Town, and was addressed by the Mayor (Mr. T. J. O'Reilly) and several Imperialist Members of Parliament, including the Hon. A. Wilmot, Member of the Legislative Council; Major-General Brabant, Colonel Schermbrucker, Major Crewe and Mr. Zietsman, Members of the Legislative Assembly.

The following resolutions were passed:—

“This meeting views with alarm the proclamation as issued by

Field-Marshal Lord Roberts on August 20th concerning the collection of taxes, licences, and other assessments, which, to our surprise, are alleged to be due to the late Transvaal Government during our enforced absence from the country, and respectfully claims that in accordance with equity and justice the fact that such dues are 'null and void' should be officially recognised." The reading of the resolution was received with loud applause.

"This meeting claims the attention of Her Majesty's Government to the fact that many of the appointments under the new administration in the Transvaal are held by former representatives of interested corporations, and therefore lack public confidence."

The following is an extract from the report of the meeting :—

"The Hon. Mr. Wilmot, Member of the Legislative Council, addressing the meeting, said there was one thing he must speak about, which he considered almost as dangerous as Paul Kruger had been, and that was the monopolising grasp of millionaires and speculators. He would tell them that at the present time their interests were suffering—not that the military were corrupt, not that the military were in any way doing anything contrary to their conscience, but they were men who did not understand civil administration. He hoped it was not true, but he thought it was very true, that their interests were suffering in Johannesburg through the influence of very rich men there, and that was a great danger."

V. PRINCIPLES OF LEGISLATION AND ADMINISTRATION IN THE NEW TERRITORIES.

From what I have already shown as to the divergence of the welfare of the Empire and the prosperity of South Africa as a whole from the line of action dictated by the plainest self-interest to the mining magnates, it will be easy to deduce in outline the principles which should guide the new Government of the Transvaal in legislation and administration.

In all appointments to public office, special care should be taken in view of the welfare of the people, and of their prejudices and well-founded alarm as well, to avoid the least suspicion of undue capitalistic influence. No director or other official of the great houses should be appointed to any administrative post in the Transvaal, and no one who has formerly held such a position. The enormous wealth of the great capitalists will continue to give them enough and to spare of influence on public action.

In legislation, similar principles should be kept clearly in mind. The present absurd law of the Transvaal requiring claim licences to be paid whether the claims are worked or not, should be promptly repealed.

With regard to taxation under the Gold Law on mines already in existence, a quite different system, approximating to the Klondyke or Rhodesian Law, should be introduced. The whole system of claim licences should be superseded by a tax on the gross output of the mines in gold; this tax increasing on a sliding scale according to the magnitude of the output.

With regard to mines as yet undeveloped, the Klondyke or Rhodesian Law should be applied in full. The mineral wealth of the country should be treated as a fund primarily for public purposes, and not for the creation of millionaires.

The taxation on all mines, developed and to be developed, should be utilised for such purposes as the building of bridges, the making of roads and railways, the carrying out of irrigation works on a large scale, the creation of an Immigration Department and a Forestry Department; as well as for expenditure on education, the administration of justice, and maintenance of police. Out of these funds too should come the expenditure necessary to meet a share of the cost of the War, and to defray the compensation to be awarded to the expelled Uitlanders for direct loss.

As a corollary and completion of this fiscal policy, and for the other objects of Imperial concern already enumerated—compensation to the returned Uitlanders and encouragement of immigration—all taxation on necessities of life should be abolished.

VI. IMMEDIATE LEGISLATION.

The immediate legislation required to facilitate the return of the Uitlanders and the speedy resumption of civil business may be briefly stated as follows:—

1. Legislation should immediately be introduced, by proclamation of the Administrator of the Transvaal, providing that no licence moneys or other dues to the State are to be exacted of the expelled Uitlander Refugees for the period during which the War lasted and they were deprived of beneficial occupation.

2. The law of the late Transvaal Executive providing for the abolition of house rent and mortgage interest where there has been no beneficial occupation during the War, and for the reduction to one-half of house rent where there has been occupation, should be confirmed; and the same principle extended to ground rents.

3. Provision should similarly be made providing that, in the case of all contracts determinable by time, the period of the War should be treated as a *dies non*; and that the period of these contracts should be determinable accordingly.

4. The enforcement by legal process of all contracts executable in the Transvaal should be declared suspended, until a date for the resumption of civil business, to be fixed by further notice.

On the legal aspect of these measures it is unnecessary to dwell.

Let it be sufficient to say that as regards the first measure, it is simply an application of a universal principle of law all over the civilised world that no one, who by his own act has prevented another person who has contracted with him from reaping the benefit of a contract, can demand payment under that contract. As to the second measure, it may be pointed out that the enactment in question was fully within the competence of the late Transvaal Government, and besides is in harmony with the general principle of Roman Dutch Law—the common law of South Africa—touching *force majeure*. As regards the third measure, it is in harmony with a universal principle of private international law. (It has been adopted, as applicable to their time bargains, by the Committee of the Johannesburg Stock Exchange, acting on my advice.) As regards the fourth, it is simply an enforcement of express provisions of the ordinary law of the land in the Transvaal: in view of which law, be it remembered, all contracts with the Uitlander Refugees have been entered into.

On the question of the justice and expediency of these measures very much more may be said. It is only common justice and fair play to the expelled and maltreated Uitlander Refugees to endeavour, as far as the Imperial Government can effect, to replace them in something like the position they were in before they were lawlessly expelled from the Transvaal, and to give them something like an opportunity of making a fair start and beginning with a clean slate, instead of being involved in a whirlpool of litigation over public and private contracts, which would only end in the widespread bankruptcy of masses of the people, and the buying of their sold-up property by the great owners.

Of the manner in which the welfare of the Empire as a whole will be affected, and how the retention of the Imperial hold on South Africa will be strengthened by measures calculated to retain in conditions of prosperity the present existing British population, and to encourage an increase of British immigration, and of how incompatible with this policy is the obvious interest of the great mining groups of the Transvaal, I have written already, so on this I need not further dwell.

M. J. FARRELLY, LL.D.,
Barrister-at-Law.

CAPE TOWN, 10th October 1900.

APPENDIX N

THE INVALIDITY OF THE PROCLAMATION

ISSUED IN THE NAME OF

THE ADMINISTRATOR OF THE TRANSVAAL

On the 20th August 1900.

Johannesburg Gazette (No. 13 of 1900)

V.R. PROCLAMATION

Whereas it has seemed to me expedient that certain taxes, revenues, licences, royalties and moneys due to the Government of the South African Republic, according to the laws thereof, shall be paid to Her Majesty's Forces now in occupation of certain portions of the said Republic :

And whereas it is expedient that all such taxes, revenues, dues, licences, royalties and moneys as are payable upon mynpachts, claims, stands, water-rights, machine stands and bewaarplaatsen, and upon rights similar to the said claims and stands in such portions of the said Republic as are or may be in the occupation of Her Majesty's Forces, shall be paid to the Officers authorised to collect or receive the same on behalf of Her Majesty's Forces :

Now therefore, I, Frederick Sleigh, Baron Roberts of Kandahar and Waterford, K.P., G.C.B., G.C.S.I., G.C.I.E., V.C., Field Marshal, Commanding-in-Chief Her Majesty's Troops in South Africa, hereby declare, proclaim, and make known that all persons resident in the said Republic and the legal representatives of absentees who are the owners of mynpachts, claims, stands, water-rights, machine stands, and bewaarplaatsen, and of rights similar to the said claims and stands in such portions of the said Republic as are or may be in the occupation of Her Majesty's Forces, shall pay to the Officers duly authorised to collect or receive the same, such taxes, revenues, dues, licences, royalties and moneys as were and are due by them to the Government of the Republic.

GOD SAVE THE QUEEN !

Given under my hand and seal at Pretoria this 20th day of August 1900.

ROBERTS, *Field Marshal,*
Commanding-in-Chief in South Africa.

GOVERNMENT NOTICE NO. 73, 1900.

It is hereby notified for general information that all taxes, revenues, dues, licences, royalties and moneys mentioned in the Proclamation of Field Marshal Lord Roberts, Commanding-in-Chief, dated 20th August 1900, and heretofore payable at the offices of the Mining Commissioners at Johannesburg, Boksburg, Florida, Krugersdorp, Kocksoord and Heidelberg, will for the present be received by the Receiver of Revenue, Major A. G. Pawle, C.I.V., at the Revenue Department Offices, Johannesburg.

When tendering the above licences and taxes, forms must be filled in, which can be obtained upon application at the above-mentioned offices.

No transfer of rights or registration of new rights will be permitted until further notice.

It is not the intention of the Field Marshal Commanding-in-Chief to exact at present the penalties prescribed by the Gold Law for non-payment of licences, provided that persons liable to such penalties, or their representatives, use due diligence after publication of this Notice in making payment of all arrears.

G. V. FIDDES, *Political Secretary*.

PRETORIA, 20th August 1900.

The solicitors for the Refugees Committee, the Hon. Sir Pieter Faure, Minister for Agriculture of the present Cabinet, and Mr. Zietsman, Member of the Legislative Assembly, submitted to Counsel the question of the validity of the recent proclamation of Lord Roberts. The following is their statement of case:—

“About sixty years ago a certain number of British subjects being dissatisfied with British rule in the Cape Colony, left British territory and crossed the Orange and Vaal Rivers, where they established Governments of their own.

“The British Government at first disputed the right of these people to cast off their allegiance to the British Crown, but their independence was subsequently practically admitted.

“During the seventies, complications arose between the Territory then known as the Transvaal Republic and certain native chiefs, and the finances of the country being at a very low ebb, a large number of the people in the Transvaal desired annexation to England, which was soon after accomplished by Sir T. Shepstone. A section of the people became discontented, resulting in the taking up of arms against the British Government, and eventually peace was concluded and treaties followed under which the Transvaal retained self-government whilst Great Britain retained the alleged right of a Suzerain Power. Latterly, disputes arose between the Transvaal and the British Government regarding the political rights

of certain British subjects in the Transvaal, resulting in the Orange Free State throwing in her lot with the Transvaal and a declaration of war or ultimatum being sent to Great Britain on the 10th October 1899, war followed.

"When hostilities broke out, a large number of British subjects and subjects of other States were engaged in the mining industry in the Transvaal, holding considerable mining and other properties.

"The system under which the rights in these properties are vested in the holders, and with which Counsel is acquainted, is under and by virtue of licences issued by the State, and is to be renewed from month to month, the rights being contingent on the payment of such licences.

"In consequence of the disturbed state of the country practically the whole of the aforesaid holders were compelled to leave the Transvaal, the majority being ordered to leave by the Government, and in most cases the licences remain unpaid from the dates of such leaving.

"The British Forces have now entered and taken forcible occupation of the Transvaal, and remain the *de facto* Government of the country.

"On the 31st of August 1900, the Officer in command of the British Forces in Africa issued a Proclamation (under the powers vested in him) annexing the Transvaal to the British Empire, whereas prior to this proclamation a proclamation was issued by the same Officer, copy of which is attached, ordering that all licences and taxes shall be paid to the Officer representing the Imperial Government, and presumably claiming payment of all licences from the date that the same were last paid to the Republican Government. Counsel will please advise:—

"1. Is the Proclamation dealing with the payment of taxes a legal document, and must it be obeyed?

"2. At what stage of a war can the winning Power be said to have conquered sufficiently to legally annex the enemy's territory, and the recognised laws and usages of the nations?

"3. Can the conquering State acquire and claim all the benefits which may have accrued between the subjects of the conquered State and their former Government prior to the date of conquering and annexation? and what would be the position in this respect of a person who had acquired property and contracted obligations with the conquered State prior to annexation when at the same time he remained a subject of the conquering State?

"4. The effect of war on private and public contracts generally, and the duration of a contract or obligation when the enjoyment thereof is suspended by war?

"5. Assuming that the principle of the Roman Dutch Law as interpreted by the Superior Courts of South Africa is correct, and that a contract for rent of immovable property cannot be enforced against a tenant (under certain conditions) for the period he has

been deprived of beneficial occupation or enjoyment of the thing leased by the enemies of the State in time of war, how will this principle affect the non-payment of the aforesaid licences, and how far can the old or the new Governments enforce the penalties provided by law against the individual for the non-fulfilment of his part of the contract under the present circumstances?

"6. Can a State in any case claim rents arising from the lease of part of its soil, or the lease of the right to extract something from the soil, when by its own act of waging war it has deprived the lessee of the enjoyment of his rights? in other words, assuming no annexation had taken place, could the Transvaal Government under present circumstances have claimed payment of the arrear licence money?

"7. Following up this aspect of the question, can the British Government enforce all obligations against the mining community entered into before the war with the Transvaal Government, so long as the Officer in command of Her Majesty's Forces prevents the people from returning to the enjoyment of their rights?

"8. Counsel will please advise generally also.

"Presuming that there is no probability of a voluntary cession of the Transvaal, the altered features which would arise in such a case need not now be considered.

"Dated at Cape Town this 9th day of September 1900.

(Sgd.) FAURE AND ZIETSMAN."

OPINION.

The following is the opinion of Dr. M. J. Farrelly, the Counsel to whom Messrs. Faure and Zietsman submitted the case for opinion as to the validity of the Proclamation:—

In the Matter of Certain Rights affecting the Mining Community of the Transvaal.

"1. Is the Proclamation dealing with the payment of taxes a legal document, and must it be obeyed?" (Proclamation annexed.)

From the terms of the preamble of this Proclamation—"shall be paid to Her Majesty's Forces now in occupation of the said Republic"—it would appear that the claim has been made prior to the annexation of the territory of the late Republic to Her Majesty's territories. I am of opinion, therefore, that the claim is invalid in law. In a leading case in the English Courts—*United States of America v. Prioleau* (25 L. J. Ch. N.S. 7)—it was laid down by the Court:—

"The Courts of every country recognise a Government *de facto* to this extent, for the purpose of saying—'You are established *de facto*, if you are allowed by those whom you affect to govern to levy taxes on them, and they pay those taxes and contribution is made

accordingly, or you are acquiring property, and are at war having the rights of belligerents, not being treated as mere rebels by persons who say they are the authorised Government of the country."

"2. At what stage of a war can the winning Power be said to have conquered sufficiently to legally annex the enemy's territory, under the recognised laws and usages of nations?"

I think I cannot give a better exposition of the law in this respect than by quoting from Professor Westlake's opinion as recently published :—

"A State may cede a part of its territory, but when the whole State disappears there can be no legal cession, because no constitution provides for such a case. Neither the Legislature, the Executive, nor any General, has a commission to put an end to the State's existence. A General may conclude a Military Convention as to the terms on which he and his troops will lay down their arms, but there is this difficulty about inserting any political promises, or holding out any political hopes in such a Convention, that at that stage reconstruction cannot be far advanced, if indeed it has commenced, and in its progress it may be found impossible to carry out such promises or give effect to such hopes. A moral sanction to the extinction of a State may be obtained from a popular vote, or from the resolution of an assembly specially elected to decide on the matter; and since such sanction cannot in any case be a legal one, the voters summoned need not be only those who enjoyed the franchise before. The oligarchy hitherto governing has no moral claim to represent the South African Republic. But as against third Powers with which a question may arise as to what has become of the rights and obligations of the annexed State, the only legal title which the annexing State can claim under international usage is the will of itself as conqueror, sanctioned by time."

"3. Can the conquering State acquire and claim all the benefits which may have accrued between the subjects of the conquered State and their former Government prior to the date of conquering and annexation; and what would be the position in this respect of a person who had acquired property and contracted obligations with the conquered State prior to annexation, when at the same time he remained a subject of the conquering State?"

I am of opinion that the conquering State acquires all the rights of the State annexed, but it acquires no rights greater than those the conquered State possessed at the time of annexation. All these rights are necessarily subject to any defences which might legitimately be raised against the original claim of the conquered State. I can see no difference in the position of a subject of a hostile State, in regard to his private rights against or his liabilities towards the Government of the conquered State on the termination of war, from that of a neutral subject.

As regards the latter portion of this question, the rights of a subject of a hostile Power as against the State remain the same upon

conquest. And of course any defences on equitable claims he is entitled to assert against the predecessor in title of the new Government are valid against the new Government itself. In the case already quoted, Lord Cranworth is referred to as saying that succeeding Governments must succeed in every respect to the property as they find it, and subject to all the conditions and liabilities to which it is subject and by which they are bound.

"4. The effect of war on private and public contracts generally, and the duration of a contract or obligation when the enjoyment thereof is suspended by war."

The law on this point appears to be correctly summarised in a recent pamphlet entitled "The Legal Effect of War on Contracts and other Liabilities," by Advocate Manfred Nathan, as follows:—

(a) "The existence of a state of war does not excuse a person from liability for contracts—with the exception mentioned in (b), where the party who is sought to be liable might have foreseen or provided against the contingency of war by his contract. The question whether the party could have foreseen a contingency or not, is a matter of evidence."

(b) "Where the performance of a contract depends on the existence of a specific thing, and such thing is destroyed by warlike operations, or as a direct consequence of a state of war, there the party sought to be made liable will be excused from performance."

(c) "Where the person is bound, in the performance of a public duty, to perform a certain thing, and the performance is prevented by the outbreak of war, he will be excused from liability."

(d) "Where a thing is destroyed by the act of the Queen's enemies, and destruction of or injury to the thing causes damage to others, the owner or custodian of the thing will not be liable for such damage."

(e) "Where, on account of warlike measures, such as a state of war prevailing in a territory, invasion and fear of invasion, a tenant has been deprived of the beneficial occupation of property leased to him, he will be entitled to a remission of rent, total or partial, in proportion to the extent of his loss of occupation."

"5. Assuming that the principle of the Roman Dutch Law, as interpreted by the superior Courts of South Africa, is correct, and that a contract for rent of immovable property cannot be enforced against a tenant (under certain conditions) for the period he has been deprived of beneficial occupation or enjoyment of the thing leased, the deprivation having been caused by the enemies of the State in time of war, how will this principle affect the non-payment of the aforesaid licences? and how far can the old or the new Governments enforce the penalties provided by law against the individual for the non-fulfilment of his part of the contract under the present circumstances?"

With reference to the first question, I would point out that the matter of these Transvaal claims is not the case of a beneficial

ownership being interfered with by the enemies of the State; a matter which is dealt with in answer to the previous question; it is a case of the State itself interfering. To the general question—whether a defence of *vis major* as against the Transvaal Government or its claimant successor in title, is applicable, it seems clear that this general principle of Roman Dutch Law, being the common law of South Africa, must necessarily apply.

The Transvaal Government, by military force, prevented beneficial occupation. Their successor in title cannot be in any superior legal position.

The demand for claim licences is practically one of quitrent for land leased by the State, and therefore in this respect falls under the ordinary law as to land let on lease.

No fulfilment of penalties can legally be exacted by the new Government, since, as I have already stated, they cannot claim rights more extensive than those of their predecessors in title.

“6. Can a State in any case claim rents arising from the lease of part of its soil, or the lease of the right to extract something from the soil, when by its own act of waging war and expelling the lessee it has deprived the lessee from the enjoyment of his rights? in other words, assuming no annexation had taken place, could the Transvaal Government under present circumstances have claimed payment of the arrear licence money?”

There is only one word in answer to this inquiry. It is No. Neither State nor individual can make a profit out of the consequences of their own act preventing the other party to a contract from reaping the benefit of the contract. *Nemo potest lucrum facere ex delicto suo.*

“7. Following up this aspect of the question, can the British Government enforce all obligations against the mining community entered into before the war with the Transvaal Government so long as the officer in command of Her Majesty's forces prevents the people from returning to the enjoyment of their rights?”

Quite apart from the fact that the acts of the Transvaal Government had invalidated any claim they might have had under their contracts, the succeeding Government, by its own act in preventing return to the territory and thereby preventing beneficial occupation, has invalidated its claim.

“8. Can there be a voluntary cession of the Transvaal?”

As already intimated, and as stated in Professor Westlake's opinion, there can be no voluntary cession of the Transvaal. There is no body in existence with power to make such cession.

M. J. FARRELLY, LL.D., *Barrister-at-Law.*

APPENDIX O

From "HAZELL'S ANNUAL," 1901, p. 193.

DEATH DUTIES.

All the property of the deceased is firstly liable to *estate* duty, and then to legacy and succession duties. Foreign property is to be included only when such property would formerly have been subject to succession or legacy duty; and in the case of property in the Colonies any duty payable in the Colony for the property is to be allowed as a deduction from the estate duty; and if the Commissioners are satisfied that duty is chargeable in a foreign country in respect of property there, they are to make an allowance of the amount of that duty from the value of the property. The following table notifies the amounts payable under the *estate* duty of the Finance Act, 1894, viz. :—

ESTATE DUTY.

Value of the Estate.		Rate per Cent. of Estate Duty.		
£	£	£	s.	d.
101 to	500	1	0	0
501 ..	1,000	2	0	0
1,001 ..	10,000	3	0	0
10,001 ..	25,000	4	0	0
25,001 ..	50,000	4	10	0
50,001 ..	75,000	5	0	0
75,001 ..	100,000	5	10	0
100,001 ..	150,000	6	0	0
150,001 ..	250,000	6	10	0
250,001 ..	500,000	7	0	0
500,001 ..	1,000,000	7	10	0
1,000,001 and upwards		8	0	0

To ascertain the percentage of duty payable, all the property passing on the death of its owner is to be aggregated so as to form an estate. *Legacy* duty is payable on legacies and shares of residue under a will or intestacy, and is applicable to personal property, except leaseholds either within the United Kingdom or abroad of a person

who died domiciled in the United Kingdom. The rate of this duty is as under :—viz., for legacies to children, or father, mother, or lineal ancestors, £1 per cent. ; to brothers or sisters or their descendants, £3 per cent. ; to brothers and sisters of the father and mother of deceased, or any descendant of such brothers or sisters, £5 per cent. ; to brothers and sisters of grandfather or grandmother, or any descendants of such brothers or sisters, £6 per cent. ; to persons of other degrees of consanguinity or strangers in blood, £10 per cent. *Succession* duty is payable on the interest that an individual takes as successor to a deceased person on real or leasehold property in the United Kingdom, or on legacies charged upon the proceeds of sale of real estate of a person who died domiciled in this country, irrespective of the situation of the property ; and also on personal property included in a settlement, whether that property was at home or abroad. The duty varies in a similar manner to the legacy duty, and is as follows :—£1 per cent. on the value of succession to lineal descendants ; £3 per cent. to brothers and sisters and their descendants ; £5 per cent. to brothers and sisters of the father or mother of the predecessor, or the descendants of such brothers or sisters ; £6 per cent. to brothers and sisters of the grandfathers or grandmothers of the predecessor, or descendants of such brothers or sisters ; and £10 per cent. to persons of other degrees of consanguinity or strangers in blood. The value of a succession to real estate is ascertained by tables in the Succession Duty Act of 1853. The beneficial interest is considered as an annuity equal to the net yearly value of the property during the lifetime of the successor, or other shorter term to which his interest may extend. By the Finance Act, 1894, the principal value of any property liable to the new estate duty is to be estimated on the price which, in the opinion of the Commissioners, the property would realise if sold in the open market at the time of the death of the deceased ; but, as regards agricultural property, the value is not to exceed twenty-five years' purchase of the property, as assessed under Schedule A. of the Income Tax Acts, after deducting £5 per cent. for expenses of management. Disputes as to valuation of the property may be referred to the High Court, or to the County Court where the amount is less than £10,000. Duty on real property may be paid by eight yearly or sixteen half-yearly instalments. It is provided by the Finance Act, 1896, that estate duty on annuities may be paid by four equal annual instalments.

APPENDIX P

ORANGE RIVER COLONY

LIST OF GOVERNMENT FARMS

DISTRICT OF BETHLEHEM.

No.	Name.	Regd. No.	Size.		Title.
			Morgen.	Roods.	
1	Newbridge	321	2	0	Grondbrief
2	Uitroep	368	1344	251	"
3	Sandfort	420	1	0	"
4	Daaran	424	unsurveyed	...	"
5	Welbedacht	425	"	...	"
6	Vlakbult	426	"	...	"
7	Komthier	427	"	...	"
8	Wellust	428	"	...	"
9	Lijnplaats	430	"	...	"
10	Hooguit	433	"	...	"
11	Verkijk	429	686	160	"
12	Eiffel	500	80	486	"
13	Beginsel	515	777	357	"
14	Braamhoek	516	929	0	"
15	Boschkloof	517	1958	182	"
16	Rhebok Kop	518	2277	567	"
17	Bolivia	755	622	598	"
18	Hekla	859	29	0	"

DISTRICT OF BOSHOF.

No.	Name.	Regd. No.	Size.		Title.
			Morgen.	Roods.	
1	Winterhoek	95	4367	72	Grondbrief
2	Welgeluk	155	1940	220	"
3	Jansepan	239	1035	427	"
4	Roodepanvlakte . .	245	824	60	"
5	Witpan	257	unsurveyed	...	T.A. 6644 (no title)
6	Zoet-en-zuur	285	1650	590	Grondbrief
7	Boomplaats	477	unsurveyed	...	T.A. 54291 (no title)
8	Preezdal	484	1428	401	Grondbrief
9	Onverwacht	494	1608	167	"
10	Langerug	495	709	420	"
11	Overschot	496	1551	551	"
12	Arnotsden	572	1037	350	"
13	Verdriet	573	701	296	"
14	Triangle	574	476	0	"

APPENDICES

DISTRICT OF CALEDON RIVER.

No.	Name.	Regd. No.	Size.		Title.
			Morgen.	Roods.	
1	Pollux	248	2	0	T.A. 27050

DISTRICT OF FAURESMITH.

No.	Name.	Regd. No.	Size.		Title.
			Morgen.	Roods.	
1	De Brug	597	563	108	T.A. 45816
2	Leeuwkop	663	970	566	Grondbrief.
3	Hamelbult	675	132	12	Grondbrief (no title)
4	{ Kalabas Brug West (Bridge) }	705	0	56.5	T.A. 55237
5	{ Kalabas Brug East (Bridge) }	707	1	254	T.A. 55238

DISTRICT OF FICKSBURG.

No.	Name.	Regd. No.	Size.		Title.
			Morgen.	Roods.	
1	Uitval	45	1756	547	Grondbrief.
2	Betsy's Daal	256	1	79.07	T.A. 54145

DISTRICT OF HARRISMITH.

No.	Name.	Regd. No.	Size.		Title.
			Morgen.	Roods.	
1	Bruwersjeugd	34	1275	52	Grondbrief.
2	Woest Arabia	40	458	90	"
3	Landdrost	45	0	534	T.A. 41488 (no title)
4	{ Oranje (Bridge) (Wilge River) }	286	2	0	T.A. 47044 (no title)
5	{ Cornelis River Bridge " A " }	303	0	147	T.A. 47298
6	{ Brugggrond (over Cor- nelis River) }	346	0	420	T.A. 48868
7	Oldenburg	384	4898	180	Grondbrief.
8	Steelbridge	488	3	0	T.A. 30197
9	Borderbridge	545	1	0	T.A. 30702
10	Middelste	643	705	0	Grondbrief.
11	Holhoek	644	unsurveyed	unsurveyed	"
12	Oever	645	789	0	"
13	Vaalklip	646	unsurveyed	unsurveyed	"
14	Gevonden	670	"	"	"
15	Aangezien	672	"	"	"
16	Ganshoek	685	"	"	"
17	Zwaluw	787	2	66	T.A. 36776

DISTRICT OF HEILBRON.

No.	Name.	Regd. No.	Size.		Title.
			Morgen. unsurveyed	Roods. unsurveyed	
1	Alphen	7			Grondbrief.
2	{ Servitude on Honing- kopjes }	80	...	...	T.A. 53645
3	Kronenbloem	104	1402	157	Grondbrief.
4	Keerom	105	2390	120	"
5	Molensteinpan	129	3018	469	"
6	Oorsprong	135	1248	440	"
7	Rachan	163	1821	500	"
8	Somerset	193	2618	516	"
9	Vrijburgh	236	unsurveyed	unsurveyed	"
10	Moscow	274	1294	0	"
11	Bieskop	295	559	0	"
12	Middenin	334	1580	152	"
13	Rietput	347	1265	300	"
14	Vrijheid	363	1462	550	"
15	Zandoog	373	1586	500	"
16	Open	386	1288	334	"
17	Preston	393	546	316	"
18	Kimberley	417	809	0	"
19	Raaffie	428	334	394	"
20	Welgelegen	432	997	132	"
21	Fortuna	433	1517	294	"
22	Uitval	434	835	562	"
23	Tusschenin	439	869	240	"
24	Springbokvlakte	446	1867	169	"
25	Uitkijk	451	865	350	"
26	Grasplaats	460	1469	529	"
27	Jubilee	461	418	553	"
28	Bovenuit	494	1004	18	"
29	Odin	621	147	217	"

DISTRICT OF HOOPSTAD.

No.	Name.	Regd. No.	Size.		Title.
			Morgen.	Roods.	
1	Kwaggavlake	21	3074	280	Grondbrief.
2	Vrijheid	22	2654	85	"
3	Gouvernementsrecht	23	2979	489	"
4	Overijssel	24	2535	361	"
5	Friesland	25	2850	489	"
6	Grasveld	40	2743	400	"
7	Noord Holland	50	2349	309	"
8	Zandaam	60	1468	116	"
9	Utrecht	195	6316	206	"
10	Vrijheid	199	1333	86	"
11	Alles zal recht komen	226	685	274	"
12	Uitenhaag	257	2815	199	T.A. 40867 (no title)
13	Uitvlucht	258	848	2832/3	Grondbrief.
14	Leeuwdoorns	272	1265	568	Grondbrief (no title)
15	Lambrechtsfontein	273	2415	468	do.
16	Strijdvlakte	316	unsurveyed	unsurveyed	T.A. 46790
17	Aanvraag	332	720	278	Grondbrief.
18	Tel-el-Kebir	354	400	308	"
19	Kettingvlakte	355	555	523	"
20	Grootboom	367	1428	104	"
21	Angra Pequena	381	605	90	"

APPENDICES

DISTRICT OF JACOBSDAL.

No.	Name.	Regd. No.	Size.		Title.
			Morgen.	Roods. Estimtd. size	
1	Zoutpan	82	120	..	(No title)
2	Uitkijk	129	300	..	..

NOTE.—These farms are supposed to be non-existent.

DISTRICT OF KROONSTAD.

No.	Name.	Regd. No.	Size.		Title.
			Morgen.	Roods.	
1	Fairfield	27	1924	168	Grondbrief.
2	Gelijkvlakte	142	1921	287	..
3	Goudvlakte	268	1141	380	..
4	Aankom	269	2215	170	..
5	Dubbelpan	439	1755	384	..
6	Kruijspan	442	2793	585	..
7	Barberpan	452	4932	593	..
8	Vlakpan	453	3167	400	..
9	Driedoorn	473	830	125	..
10	Vlaklaagte	478	1419	8	..
11	Katboschpan	489	1818	103	..
12	Cradock	520	1971	490	..
13	Klipdraai	664	1776	23	..
14	Canada	738	1387	484	..
15	Rosepan	739	1201	580	..
16	Wonderbult	740	726	344	..
17	Reitkuil	781	1881	160	..
18	Gastvrijheid	784	2148	210	..
19	Welgelegen	793	2248	0	..
20	Taaiboschpan	813	2245	0	..
21	Putfontein	814	1560	349	..
22	Landdrost Blignaut	817	2916	112	..
23	Rooderand	818	2335	79	..
24	Landdrost Robertson	873	876	196	..
25	Diamant	930	347	382	..
26	Avondale	1092	307	352	..

DISTRICT OF LADYBRAND.

No.	Name.	Regd. No.	Size.		Title.
			Morgen.	Roods.	
1	Witkopje	140	939	419	T.A. 23689

DISTRICT OF ROUXVILLE.

No.	Name.	Regd. No.	Size.		Title.
			Morgen.	Roods.	
1	Castor	455	2	0	T.A. 26859
2	Uitspanning	495	294	190	Grondbrief.

APPENDIX P

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DISTRICT OF VREDE.

No.	Name.	Regd. No.	Size.		Title.
			Morgen.	Roods.	
1	Blackhill	7	1018	60	Grondbrief.
2	Begeerlijk	28	896	0	"
3	Muirton	29	1035	130	"
4	The Ovens	37	781	190	"
5	Loch Ben	57	781	101	"
6	Negenfontein	251	1794	320	"
7	Orebielaagte	308	1072	240	"
8	Uitspanning	360	1385	300	"
9	Ouhoudshoek	364	996	0	"
10	Stillewoning	365	1060	0	"
11	Mooigenoeg	366	1027	0	"
12	Frankfort Bridge . .	577	1	149	T.A. 54777

DISTRICT OF WEPENER.

No.	Name.	Regd. No.	Size.		Title.
			Morgen.	Roods.	
1	Geluk	110	460	20	Grondbrief.
2	Karreefontein	121	613	340	"
3	Biessiesdal	169	1620	0	"
4	Jammerbergs Brug, A.	267	0	300	T.A. 53797
5	" " " B.	269	2	0	T.A. 54191
6	Sphynx	270	10	466	Grondbrief.

DISTRICT OF WINBURG.

No.	Name.	Regd. No.	Size.		Title.
			Morgen.	Roods.	
1	Frischgewaagd	114	1202	40	Grondbrief.
2	Mushroomvalley	280	1550	89	"
3	Early Morn	281	2551	230	Grondbrief (no title)
4	Paardekraal	282	1540	442	"
5	Farewell	283	734	532	"
6	Rodekop	284	1265	13	"
7	Schimpersvley	679	1453	0	"
8	Dispuut	914	172	543	T.A. 45834
9	Middenin	926	848	265	Grondbrief.
10	Klein Vet Rivier Bridge	1122	0	354	T.A. 56140
11	Laaispruit Bridge . .	1123	0	559	T.A. 56139

DISTRICT OF BLOEMFONTEIN.

No.	Name.	Regd. No.	Size.		Title.
			Morgen.	Roods.	
1	Grootvley	206	1810	519	Grondbrief.
2	Uitval	353	36	262	„ no title
3	Sydenham	445	502	200	T.A. 54453
4	Lechoara, Moroka	1012	1176	250	Grondbrief.
5	Zoetlaagte	1013	2312	584	„
6	Likatlong	1014	1497	320	„
7	Hoepelrok	1015	1369	174	„
8	Ramalitse	1016	873	0	„
9	Moltanyana	1017	862	413	„
10	Khumo	1018	2822	100	„
11	Golimo	1019	4088	425	„
12	Patchoane	1021	3071	316	„
13	England	1022	2551	345	„
14	Wilgeboomsnek . .	1023	466	235	„
15	Vaalkraal	1024	1219	0	„
16	Commissiehoek . .	1026	2347	0	„
17	Roodebult	1027	2246	138	„
18	Kgama	1028	1187	187	„
19	Seliba	1029	1946	198	„
20	Tala	1030	1653	554	„
21	Bofulo	1031	1856	30	„
22	Mokopo	1032	4737	0	„
23	Leeuwdraai	1033	2266	0	„
24	Morago	1034	4226	296	„ no title
25	Kgalala	1035	4563	24	„
26	Mooihoek	1036	932	553	„
27	Alexandria	1037	4553	117	„
28	Palafala	1038	488	0	„
29	Malika	1041	1558	400	„
30	Phokoane	1042	3482	0	„
31	Mafeteng	1043	2810	0	„
32	Menschvretersberg .	1044	2835	400	„
33	Lokoala	1046	1036	324	„
34	Mount Pleasant . .	1047	1945	334	„
35	Abrahamskraal . . .	1057	1263	228	„
36	Salisbury	1071	2138	320	„
37	Gladstone	1072	1987	300	„
38	Lesaka	1073	1411	50	„
39	Feloana	1117	582	0	„
40	{ Thabancho (loc- } tion) Moroka }	1162	6709	370	„ no title
41	Modder River Bridge, B	1279	0	206.6	T.A. 53860
42	„ „ „ A	1280	0	508.8	T.A. 53893

Also a number of *erven* (stands) in nearly every town and village in the Colony.

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